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of Transportation

United States
Coast Guard



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From: Commander, Thirteenth Coast Guard District
To: Commandant (G-MOV)

Subj: PORT ACCESS ROUTE STUDY FOR STRAIT OF JUAN DE FUCA

1. Enclosed is the Port Access Route Study (PARS) for the Strait of Juan de Fuca and Adjacent Waters dated November 2000. This study was completed following a Notice of Study published in the Federal Register on 20 January 1999; a Notice of Meeting/Extension of Comment Period published in the Federal Register on 15 April 1999; and a Notice of Preliminary Study Recommendations With Request For Comments published in the Federal Register on 23 February 2000.

2. Much of the data incorporated in this study was gathered from comments received to the docket, public outreach meetings, and recent studies such as the Puget Sound Additional Hazards Study, or "Volpe Study", and the North Puget Sound Long-Term Oil Spill Risk Management Study.

3. I recommend implementation of all final recommended actions. For those actions requiring IMO approval, I request submittal of a proposal to IMO by 1 April 2000. Our staffs have discussed the time-critical nature of this action and we stand ready to assist in expediting its completion.

4. My point of contact in this matter is CAPT Gary Greene who may be reached at (206) 220-7273.

Handwritten signature of Erroll Brown in cursive script.
ERROLL BROWN

PORT ACCESS ROUTE STUDY
STRAIT OF JUAN DE FUCA AND ADJACENT WATERS

DOCKET #USCG-1999-4974

NOVEMBER 2000

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I. INTRODUCTION

Approximately 11,000 vessels of greater than 300 GT moved through the Strait of Juan de Fuca in 1999. It is anticipated that this number will increase to approximately 17,000 by the year 2025. The Federal Cost-Benefit Analysis¹ estimated that approximately 15.1 billion gallons of crude oil, refined products and bunker fuel oil will be moved through the Strait in 2000. By 2025 the volume is expected to increase to approximately 19.2 billion gallons. About 7.6 billion gallons of this total volume will be crude oil imported to Puget Sound area refineries. Additional crude oil is exported from Canada's Port of Vancouver and 2.8 billion gallons of refined products will be exported from Puget Sound. Other indicators of increasing maritime activity in the area include:

- Expansion of the Port of Vancouver's Delta Port just north of the international border on the Strait of Georgia, in British Columbia. This facility is predicted by some experts in the field, to become one of the foremost container terminals on the west coast.
- The proposed gateway terminal near Cherry Point on the Strait of Georgia, in Washington State.

¹North Puget Sound Long-Term Oil Spill Risk Management Study

- Potential Pacific-Rim trade expansion resulting from China receiving most favored trading status. Pacific Northwest ports are closer to the Orient via great circle routing.

Washington Public Ports Association's 1999 Marine Cargo Forecast projects that "total waterborne tonnage through Puget Sound ports is expected to increase by 42% to nearly 121.6 million tons in 2020, compared with 85.6 million tons in 1997." The report further projects that the "total container traffic through the Puget Sound ports of Seattle and Tacoma is expected to grow by 131% from 2.6 million TEU's in 1997 to 6 million TEU's in 2020".

Other vessel traffic indicators pertinent to the study area are that the greater Puget Sound area constitutes the third largest naval port complex in the United States and supports one of the highest per capita recreational boat ownerships.

Material in this section was excerpted, in part, from the "North Puget Sound Long-Term Oil Spill Risk Management Study" and "Regulatory Assessment-Use of Tugs to Protect Against Spills in the Puget Sound Area".

II. BACKGROUND

A. Statutory Authority: Section 4(c) of the Ports and Waterways Safety Act (PWSA), (P.L. 95-474, 33 U.S.C. 1223), authorizes the Secretary of Transportation to designate

necessary fairways and traffic separation schemes (TSS's) to provide safe access routes for vessels proceeding to and from U.S. ports or other places subject to the jurisdiction of the United States. This authority was delegated to the Commandant, U.S. Coast Guard by 49 CFR 1.46(n).

The PWSA requires the Coast Guard to undertake a study of the potential traffic density and the need for safe access routes for vessels in any area for which a fairway or traffic separation scheme (TSS) is proposed or otherwise considered. A TSS is an internationally recognized routing measure that minimizes the risk of vessels colliding, by separating vessels into opposing streams of traffic through establishment of traffic lanes.

The PWSA also authorizes the Coast Guard to adjust the location or limits of designated fairways or TSS's in order to accommodate the needs of other users that cannot be reasonably accommodated otherwise. The adjustment cannot unacceptably and adversely affect the purpose for which the existing designation was made, if the need for such designation continues.

B. Definition of Terms Used in This Report:

Area to be avoided (ATBA) means a routing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptionally

important to avoid casualties and which should be avoided by all ships, or certain classes of ships.

Precautionary area means a routing measure comprising an area within defined limits where ships must navigate with particular caution and within which the direction of traffic flow may be recommended.

Recommended route means a route of undefined width, for the convenience of ships in transit, which is often marked by centerline buoys.

Regulated navigation area (RNA) is a water area within a defined boundary for which regulations for vessels navigating within the area have been established under 33 CFR part 165.

Separation zone or line means a zone or line separating the traffic lanes in which ships are proceeding in opposite or nearly opposite directions; or from the adjacent sea area; or separating traffic lanes designated for particular classes of ships proceeding in the same direction.

Traffic lane means an area of defined width in which one-way traffic is established. Natural obstacles, including those forming separation zones, may constitute a boundary.

Traffic Separation Scheme (TSS) means a routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.

Vessel routing system means any system of one or more routes or routing measures aimed at reducing the risk of casualties; it includes traffic separation schemes, two-way routes, recommended tracks, areas to be avoided, inshore traffic zones, roundabouts, precautionary areas, and deep-water routes.

C. Study Area:

The study area encompasses waters in and around the Strait of Juan de Fuca, approximately between longitudes 126°W and 122°40'W, including Admiralty Inlet, Rosario Strait and adjacent waterways, Haro Strait, Boundary Pass and the Strait of Georgia. The study area includes both U.S. and Canadian TSS's and an area to be avoided (ATBA). Portions of the study area are managed jointly by United States and Canadian Coast Guards. Joint waterway management is accomplished primarily through the Cooperative Vessel Traffic System (CVTS). Under the CVTS Agreement, vessel traffic transiting the study area is managed by Vessel Traffic Centers located at Tofino and Victoria, BC, Canada, and Seattle, WA, irrespective of the International Boundary.

D. History:

An initial port access route study for the coasts of Oregon and Washington, including the entrance to the Strait of Juan de Fuca, was announced on April 16, 1979, in the Federal Register (44 FR 22543) and modified on January 31, 1980 (45 FR 7026).

Results of this study were published in the Federal Register (46 FR 59686) on December 7, 1981. For the Strait of Juan de Fuca, the study recommended to continue addressing port access routes under a cooperative agreement between the United States and Canada. Both countries established an "Agreement for a Cooperative Vessel Traffic Management System for the Juan de Fuca Region" in 1979. This agreement included a protocol to develop a TSS at the entrance to and within the Strait of Juan de Fuca. This TSS was adopted by the Marine Safety Committee of the International Governmental Maritime Consultative Organization (now called "International Maritime Organization") and became effective on January 1, 1982. Other than minor alignment changes, no modifications have been made to the TSS in the study area since that date.

The latest Waterways Analysis and Management System (WAMS) report for the Strait of Juan de Fuca, dated June 1995, identified potential measures to improve navigational safety and traffic management efficiency. In 1997, on behalf of the Coast Guard, the Volpe National Transportation Systems Center conducted a broad assessment of the probabilities and consequences of marine accidents in the Puget Sound-area, including Puget Sound, the Strait of Juan de Fuca, passages around and through the San Juan Islands, and the offshore waters of the Olympic Coast National Marine Sanctuary. This

assessment, formally titled "Scoping Risk Assessment: Protection Against Oil Spills in the Marine Waters of Northwest Washington State," but commonly called the "Puget Sound Additional Hazards Study," or "Volpe Study" recommended several vessel routing measures for further study, including changes to the offshore approaches to the Strait of Juan de Fuca. In September, 2000, the North Puget Sound Long-Term Oil Spill Risk Management Panel, or "Oil Spill Risk Panel" presented their final report and recommendations to the Navigation Safety Advisory (NAVSAC) Council for their consideration. The Oil Spill Risk Panel and NAVSAC endorsed the PARS initiative. In some instances, the council made additional recommendations regarding traffic management. Implementation of the changes recommended in these documents requires IMO approval. This is contingent on the completion of a port access route study.

III. THE STUDY

A. Development:

In August 1998, the Thirteenth Coast Guard District initiated a PARS for the Strait of Juan de Fuca and Adjacent Waters. A Federal Register Notice (64 FR 3145, January 20, 1999) announced the study and solicited comments. The notice contained a list of potential study topics and a list of questions to help focus responses. We announced via another Federal Register notice (64 FR 18651, April 15, 1999) that we

would conduct a public meeting to collect data information. The meeting was held on May 12, 1999.

Eleven letters were received in response to the published notice of study. Another five comments were recorded from oral commentary presented at the public meeting. We believed that the responses to the public notice and the meeting did not adequately address the depth and breadth of issues in this important study. However, from the comments received we identified the following list of basic issues to be considered in the study:

(a) High density traffic with diverse vessel types and activities taking place within the entire study area.

(b) Change in operating mode for deep draft vessels entering the Strait (changing over fuel, steering tests, etc.).

(c) Smaller vessels operating in the western end of Strait not under VTS control.

(d) Lack of maneuvering room at the western entrance to Strait.

(e) Commercial fishing in the traffic lanes, no Rule 10 compliance.

(f) Move the western entrance to the Strait further offshore and modify to make one entrance. Modify the ATBA accordingly.

(g) Do not modify the ATBA.

(h) Make compliance with the ATBA mandatory.

(i) Formally recognize offshore VTS to coincide with VTS Tofino radar coverage.

(j) Vessels in the TSS may miss turn at 124°W dogleg.

(k) Investigate need for the dogleg at 124°W.

(l) Designate inshore traffic zones/auxiliary traffic lanes for slower moving/smaller vessels.

(m) Modify the precautionary area at Port Angeles and Victoria to reduce the number of turns and simplify pilot embarkation/debarkation.

(n) Formally designate anchorage/holding areas for pilot embarkation/debarkation.

(o) Require mandatory compliance with the TSS in U.S. waters.

(p) Review Navy operating areas for level of use.

(q) Establish vessel traffic lanes in Haro Strait and consider 1-way traffic for oil-laden vessels.

(r) Require all commercial traffic to maintain a

minimum distance offshore of 1 nautical mile.

(s) Consider modifying the 1-way traffic regulation for Rosario Strait to apply to all deep draft vessels.

(t) Align U.S. and Canadian traffic management practices.

With these basic issues for guidance we considered information presented in various studies and data collected both in-house and by other organizations, on vessel traffic patterns and density, and risks associated therewith. U.S. Coast Guard sources included the latest Waterways Analysis and Management System (WAMS) reports for the Strait of Juan de Fuca, Haro Strait and Boundary Pass, Rosario Strait, Strait of Georgia, and Admiralty Inlet. Another data source was the Volpe Study.

In view of the small number of responses received from the notice of study and at the public meeting, we embarked on a program to solicit input from the maritime industry and other potentially affected parties. United States and Canadian VTSSs provided data on vessel traffic throughout the study area. The Olympic Coast National Marine Sanctuary Manager utilized portions of this traffic data to conduct further track analysis in the vicinity of the Traffic Lane Separation Lighted Buoy "J" (Juliet Buoy) and Duntze Rock. We met with Canadian Coast Guard

and Transport Canada representatives to discuss and define issues. Input was solicited through meetings with a broad representation of U.S. and Canadian user groups as well as representatives of environmental advocacy groups and Native American tribal groups.

Through our review of documents and data, and with expert input from U.S. and Canadian VTS operators and managers, broader issues emerged which indicated that changes in the TSS and other operational measures were desirable to enhance vessel safety. From this information we developed preliminary recommendations which were the basis for a further Federal Register notice (65 FR 8917, February 23, 2000), which solicited comments on the preliminary recommendations. These recommendations included: modifications and/or additions to vessel routing measures in and around the Strait of Juan de Fuca and adjacent waters including Haro Strait, Boundary Pass, Rosario Strait, and the Strait of Georgia; modifications and/or additions to a number of vessel operating regulations/practices; establishment of a common bridge-to-bridge VHF frequency for the boundary waters between the United States and Canada; and the delineation of waters within the study area where all or certain provisions of Rule 9 of the COLREGS would apply. Concurrent with publication of preliminary study recommendations, a Thirteenth District PARS

web site was commissioned which provided the text of the Federal Register notice and charts depicting the recommended changes.

During the comment period we and our Canadian counterparts embarked on a vigorous outreach program to present the recommended changes to, and request commentary from, a wide group of waterway users and other potentially affected/interested groups. We offered to meet with them to explain the PARS and solicit their input. Over 300 copies of the Federal Register notice (65 FR 8917), with chartlets, were distributed by mail and direct handout. Meetings with groups that responded to our offer were held in the U.S. and Canada. Among those accepting on the U.S. side were: Puget Sound Marine Committee, Puget Sound Steamship Operators Association, Western States Petroleum Association, North Pacific Fishing Vessel Owners Association, Northwest Cruise Ship Association, U.S. Navy, Seattle Yacht Club (with reps. from other area yacht clubs), Makah Tribe, San Juan County, Clallam County, People For Puget Sound (environmental), American Waterways Operators (AWO), and the North Puget Sound Long-Term Oil Spill Risk Management Panel. In Canada, Transport Canada, Marine Safety and the Canadian Coast Guard presented the PARS recommendations to the Pacific Coast Marine Review Panel, who referred them to a sub-committee PARS working group for review and comment. Presentations for comment were also provided to members of the Chamber of Shipping

of B.C., Council of Marine Carriers, Pacific Pilotage Authority, B.C. Coast Pilots, B.C. Ferries, and major port representatives, as well as a broad cross-section of maritime stakeholders through the Canadian Marine Advisory Council (CMAC). Other groups in the United States were contacted by letter and did not respond.

Based upon comments received to the Federal Register notice and input from our outreach program our initial recommendations have been refined and in some cases modified to more accurately reflect the needs of various user groups while enhancing navigational safety. Two new issues were also identified and discussed in this PARS.

B. ISSUES:

This part of the study will present the following:

- Issues.
- Preliminary Discussion of each issue.
- Preliminary Recommendation for each issue.
- Comments Received.
- Discussion of the comments received for each issue.
- Final Recommendation concerning the issue.

The issues, preliminary discussions, and preliminary recommendations, respectively, are presented exactly as they appeared in the Federal Register notice of preliminary study

recommendations. The discussion of comments received and our final recommendation for each issue are self-explanatory.

A. General Issues Relevant to the Entire Study Area.

Issue #1:

Should compliance with the TSS be mandatory in U.S. waters?

Preliminary Discussion:

Participation with the VTS is compulsory for certain classes of vessels; however the actual use of the TSS is not specifically mandated under U.S. regulations. The VTS has the ability, on a case-by-case basis, to require a specific vessel to use the TSS. This is accomplished as a "VTS Direction" under 33 CFR 161.11.

Over time, the CVTS has found it desirable to require only larger, deep draft vessels that can maintain a speed of 12 knots or more to use the TSS. Experience has shown that almost all of these vessels voluntarily choose to follow the TSS. On the rare occasion that a larger, deep draft vessel attempted not to follow the TSS, the CVTS has succeeded in encouraging or directing the vessel to do so.

The Canadians, through a modification to Rule 10 of the COLREGS, require all vessels 20 meters or over to follow the TSS when it is safe to do so. However, they do not aggressively enforce this provision, considering it not desirable to require smaller and/or slower moving vessels to follow the lanes.

Mixing vessels of large disparate speeds significantly increases the frequency of vessel interactions.

Preliminary Recommendation:

Do not make the TSS mandatory, as we do not consider regulatory imposition necessary to gain compliance. The current system of voluntary usage, combined with persuasion and existing regulatory tools, ensures that those vessels that should be in the traffic lanes actually are.

Comments Received:

We received eight written comments on this issue. One from a private citizen supported mandatory compliance. Four supported voluntary compliance: one from a U.S. pilots' organization, one from a group of professional mariners, one from a representative of deep draft navigation interests, and one from a representative of the commercial fishing industry. Three supported mandatory compliance for certain classes of vessels: two from representatives of environmental groups and one from a group of County Commissioners. Those supporting voluntary use of the traffic lanes argued that mandatory usage is not necessary because of the present high level of voluntary compliance. Those supporting mandatory use of the traffic lanes argued that mandatory usage will increase safety and insure that non-compliant vessels are subject to legal sanctions.

Discussion:

Use of the traffic lanes in Canadian waters is required for all vessels over 20 meters. There is no similar requirement in U.S. waters. Although voluntary compliance is high for these vessels while in U.S. waters, this inconsistency with Canada does on occasion unnecessarily create confusion.

Final Recommendation:

Work with the Canadian Coast Guard and Transport Canadian Marine Safety to make use of the TSS mandatory for all CVTS participants over 50 meters unless the requirement is waived by the CVTS. This will: enhance order and predictability, enhance ease of enforcement, provide uniform standards north and south of the border, and have little or no impact on the marine industry because vessels of this class are routinely using the lanes. A threshold of 50 meters was chosen because a vessel of that size can be reliably tracked by CVTS radar and can usually maintain a sea speed in excess of 12 kts. The CVTS would have the authority, on a case-by-case basis, to waive the use of the lanes for any vessel that could articulate a safety reason for doing so.

Issue #2:

Should all traffic lanes, precautionary areas, and VTS special areas within the Puget Sound Area of Responsibility

(AOR) be specified as waters where all or certain provisions of Rule 9 of the International Navigation Rules would apply?

Preliminary Discussion:

Conflicts periodically develop between large vessels following a TSS, narrow channel or fairway, and smaller recreational and fishing vessels. Oftentimes, when a deep draft vessel is forced to maneuver even slightly to avoid a smaller vessel in a narrow channel or fairway, the deep draft vessel must then follow a route that is sub-optimal from a navigation safety perspective. Also, when a deep draft vessel following a fairway, or TSS is forced to radically maneuver to avoid a smaller vessel, order and predictability are lost in that other surrounding vessels no longer know what to expect from the larger vessel.

Rule 10 of the COLREGS prohibits vessels engaged in fishing, sailing vessels, and vessels of less than 20 meters from impeding the safe passage of a power-driven vessel that is following a traffic lane. However, Rule 10 does not apply to the numerous precautionary areas that link the lanes together nor to fairways that do not have established traffic lanes. Rule 9 prohibits vessels of less than 20 meters, sailing vessels, and vessels engaged in fishing, from impeding the passage of a vessel that can safely navigate only within a narrow channel or fairway. The "do not impede" provisions of

Rules 9 and 10 enhance the order, predictability, and safety of vessel movements. Deep draft vessels would be provided with optimum routing through the TSS.

Preliminary Recommendation:

Delineate and specify those waters within the VTS Puget Sound Area of Responsibility (AOR) in which all or certain provisions of Rule 9 of the International Navigation Rules would apply.

Comments Received:

We received five written comments on this issue. Two were in favor: one from a representative of the maritime industry and one from a representative of the commercial fishing industry. Two were in favor, provided the Coast Guard defines and specifies applicable areas: one from a U.S. pilots' organization and one from a group of professional mariners. One representing recreational boaters, was in favor for those lanes from Buoys "RA" and "SA" to Rosario Strait and the traffic lanes from the south end of Rosario Strait to the area of Alden Bank. The Oil Spill Risk Panel supported this recommendation. There was no opposition to the action presented as Issue #2. However, in written comment and during outreach sessions, several professional mariners expressed frustration that recreational boaters routinely impede deep draft vessels following the

traffic lanes, and there did not appear to be any enforcement or educational efforts to deter them.

Discussion:

The present TSS in U.S. waters of the study area has been adopted by IMO. As such, Rule 10 of the International Collision Regulations (COLREGS) automatically applies. Rule 9 of the COLREGS has similar, but subtly different, provisions to "not impede" but they apply only in narrow channels or fairways.

Final Recommendation:

Extend the provisions of Rule 10, Sections (i) and (j), to all Precautionary Areas and Regulated Navigation Areas within the study area. This will retain international and IMO consistency and avoid potential conflict or confusion with Rule 9. In addition, develop CVTS procedures for reporting suspected Rule 10 violations to the appropriate enforcement authorities. This will provide added order and predictability to the TSS, reduce conflicts between large deep draft vessels and smaller vessels, and facilitate enforcement on small vessel operators as appropriate.

Issue #3:

Should there be one common international frequency for bridge-to-bridge radio communications in the CVTS?

Preliminary Discussion:

Under U.S. regulations, all vessels 20 meters or over are required to guard VHF channel 13 when in U.S. waters. Channel 13 is the designated bridge-to-bridge radio frequency and is used to make passing arrangements and to clarify vessel intentions. There is no designated bridge-to-bridge frequency in Canadian waters. Passing arrangements and vessel intentions are made on the VTS Sector working frequency. The two governments must work together to establish one common bridge-to-bridge frequency, preferably channel 13, for all vessels operating within the CVTS, thus assuring timely and reliable communications between ships.

Preliminary Recommendation:

The U.S. and Canadian governments, through the Joint Coordinating Group of the CVTS, should develop internal policies that require the use of channel 13 for bridge-to-bridge communications within the CVTS area.

Comments Received:

We received five written comments on this issue. Four supported the use of channel 13: one from a U.S. pilots' organization, one from a group of professional mariners, one from a representative for the maritime industry and one from recreational boating interests. The fourth supporting comment, from the commercial fishing industry, while not opposing, noted

potential difficulties in complying. Specific concerns were expressed over potentially having to guard three different frequencies; VHF channels 13, 16, and the CVTS working frequency. In addition, comments received at an outreach meeting with the U.S. Navy supported the use of channel 13. Comments received at outreach meetings with commercial fishing interests and the marine industry supported the use of a common frequency but preferred using the VTS working frequency in order to reduce the number of frequencies they would have to guard. The Oil Spill Risk Panel supported this recommendation.

Discussion:

Under U.S. Regulations promulgated by the FCC, all vessels 20 meters or over (among others) are required to guard VHF channel 13 when in U.S. waters. There is no comparably designated bridge-to-bridge frequency in Canadian waters. Customary practice in Canadian VTS waters is for mariners to make passing arrangements on the VTS working frequency. In this way the VTS is kept fully apprised of all intended navigational interactions between participants. Participants are required to guard the CVTS working frequency while in U.S. or Canadian waters. Under the Canadian VTS Regulations, the VTS will guard VHF channel 16 on behalf of VTS participants. Likewise, vessels in U.S. waters are not required to guard VHF channel 16 when

fully participating with the VTS and guarding the VTS working frequency.

Final Recommendation:

Work with the FCC to establish the VTS working frequency as the common radio frequency for bridge-to-bridge communication in the CVTS area of responsibility. This will enhance vessel safety by assuring reliable and predictable bridge-to-bridge communications between vessels operating on opposite sides of the international border.

B. Geographic-Specific Issues.

The following issues are best reviewed and comprehended when read in conjunction with the charts of the proposed changes (Appendix A(1)-(7)) of this report.

Entrance to Strait of Juan de Fuca - (See Appendix A(1))

Issues #4a through 4f:

Should we-

- a. Extend the TSS at the entrance to the Strait of Juan de Fuca approximately 10 miles further offshore;
- b. Center the separation zone at the entrance to the Strait of Juan de Fuca on the International Boundary;
- c. Retain multiple approach lanes configured to maintain order and predictability for vessels entering or exiting the Strait;

d. Configure these lanes to the greatest extent possible to avoid customary fishing grounds;

e. Acknowledge the existence of an informal northwesterly traffic route by creating a new exit lane just north of Buoy "J" for vessels headed coastwise to Alaska; and

f. Expand the ATBA boundaries to the north and west to provide a greater buffer around Duntze Rock and offshore while still providing a protected route for slower moving vessels?

Preliminary Discussion:

All traffic entering the Strait of Juan de Fuca is funneled into the Strait through one of two short traffic lanes. The inbound traffic lane originating from the southwest may bring traffic within 1 mile of Duntze Rock. This convergence near the Juliet Buoy is in close proximity to the rocky shoreline of Cape Flattery, lies within the Olympic Coast National Marine Sanctuary, and funnels inbound southern traffic along the northern/western border of the ATBA.

It is customary practice for a large percentage of the slower moving traffic, often tugs and barges and small fishing vessels, to transit inbound and outbound south of the designated traffic lanes when on coastwise voyages to and from the south. This practice eliminates the need for slower moving southbound traffic to cross the traffic lanes, and numerous overtaking situations arising from disparate transit speeds. However,

under the present configuration, this traffic is forced to transit extremely close to Duntze Rock, and may end up infringing on either the ATBA or the inbound traffic lane. A similar practice of transiting outside the lanes is observed and condoned for small/slower vessels transiting north of the lanes in Canadian waters.

Traditional commercial and sports fishing areas are in and adjacent to the traffic lanes at the entrance to the Strait. . Occasionally, fishing vessels in the area create a conflict for vessels following the TSS, particularly during periods of reduced visibility.

Both the move of the convergence zone 10 miles to the west and the shift of the entrance point to the north would help create a "buffer zone" between the southernmost TSS lane and Duntze Rock and the nearby ATBA. This relocation provides significant sea room for conflict resolution as vessels converge toward the entrance of the Strait, thereby improving order and predictability for each entry and exit lane. Moving the northern border of the ATBA to a consistent 7000 yards south of the International Boundary and 4000 yards south of the southernmost edge of the TSS would provide an improved safety buffer for those smaller, slower moving vessels that choose to transit south of the TSS. Continuing this buffer area parallel to the TSS until a point at 124° 55' would allow sufficient room

for slower moving vessels to transit without conflicting with inbound traffic steering for the southern approach to the TSS. It would also provide a greater margin of safety around the hazards of Duntze Rock and Tatoosh Island.

In the development of these proposed changes to the TSS, we considered the location of the traditional fishing grounds off the entrance to the Strait of Juan de Fuca. Although it was not possible to completely segregate the TSS from the fishing grounds, the recommended changes minimize potential conflicts and improve the existing configuration. Our recommendations provide routing order and predictability further offshore thereby reducing conflicts between vessels following the TSS and vessels fishing at the entrance to the Strait.

Preliminary Recommendation:

That we implement all actions presented as Issues #4a through 4f.

Comments Received on Issue #4a (extend the TSS 10 miles further offshore):

We received nine written comments on this issue. Three were opposed indicating it would force smaller vessels further offshore from the lee of Vancouver Island: two from marine transportation interests and one from commercial fishing interests. Two from other marine transportation interests were concerned with an additional 10 miles of travel. A concern was

also raised that extending the lanes 10 miles westward may inadvertently encourage dangerously close crossing maneuvers between vessels intending a coastwise transit to the south and inbound traffic. Four supported the proposal: one from a group of professional mariners, one from still other marine transportation interests and two from environmental groups. The Oil Spill Risk Panel supported this recommendation.

Discussion:

Concerns raised about forcing smaller vessels further offshore from the lee of Vancouver Island were considered and found without merit, as small vessels would not be forced to use the TSS. In a separate recommendation, mandatory use of the TSS is recommended for all vessels over 50 meters. These vessels are already required to fully participate with the CVTS. No CVTS participant would be forced to follow a track or execute a maneuver that would place it in danger. Smaller vessels may, with concurrence of VTS, enter, leave, or cross the lanes in accordance with the provisions of Rule 10 of the COLREGS. The concerns regarding an additional 10 miles of travel for southbound vessels were likewise considered. The increased distance is inconsequential when considered against the total voyage distance and the resulting increase in safety realized in moving the lanes further off shore. The concern that vessel masters may exercise poor seamanship by cutting ahead of inbound

traffic to shave a little time off the overall passage is considered neither a likely nor prudent action by a professional mariner.

Final Recommendation:

Extend the TSS at the entrance to the Strait of Juan de Fuca approximately 10 miles further offshore. The extension of the entrance lanes will provide significant sea room for conflict resolution as vessels converge toward the entrance to the Strait, thereby improving order and predictability for each entry and exit lane. Also, it will help to create a "buffer zone" between the southernmost TSS lane and Duntze Rock and the nearby ATBA, thereby diminishing the risk of both drift and powered groundings.

Comments Received on Issue #4b (center separation zone on International Border):

We received three written comments on this issue. One from a representative of marine transportation interests, one from a group of professional mariners and one from an environmental organization supported the proposal. The Oil Spill Risk Panel supported this issue.

Discussion:

Only favorable response was received to the action presented as Issue #4b.

Final Recommendation:

Center the separation zone at the entrance to the Strait on the International Boundary. This will provide more sea room and safety for vessels transiting inbound past Duntze Rock and Cape Flattery, and will facilitate the creation of a recommended route south of the TSS.

Comments Received on Issue #4c (retain multiple approach lanes):

We received three written comments on this issue. One from a representative of marine transportation interests, one from a group of professional mariners and one from an environmental organization, supported the proposal. During various outreach meetings, mariners made several suggestions to slightly modify the design of the approach lanes to improve traffic flow. The Oil Spill Risk Panel supported this recommendation.

Discussion:

Only favorable response was received to the action presented as Issue #4c. The recommendations to improve the design of the entrance lanes were incorporated into the final recommendation.

Final Recommendation:

Retain multiple approach lanes. Flare the offshore ends of the lanes and soften the hard point at the southeastern corner of the inbound lane by cutting off the sharp edge. This will provide routing order and predictability further offshore

thereby reducing conflicts between vessels following the TSS and vessels fishing at the entrance to the Strait. Flaring the offshore ends of the lanes and softening the southeastern edge of the inbound lane will provide a smoother transition for vessels entering and departing the lanes.

Comments Received on Issue #4d (configure lanes to avoid traditional fishing grounds):

We received three written comments on this issue. One from a representative of marine transportation interests, one from a group of professional mariners and one from an environmental organization supported the proposal. The Oil Spill Risk Panel supported this recommendation.

Discussion:

Only favorable response was received to the action presented as Issue #4d. At two separate outreach meetings representatives of the Makah Tribal Nation indicated there were no concerns regarding the effect of the proposed lane configuration on tribal fisheries.

Final Recommendation:

Configure the lanes to the greatest extent possible to avoid customary fishing grounds. Although it was not possible to completely segregate the TSS from the fishing grounds, the recommended changes will minimize potential conflicts.

Comments Received on Issue #4e (create new exit lane north of Buoy "J"):

We received six written comments on this issue. Three opposed the action, but proposed alternative north exit and entrance lanes: one from representative of marine transportation interests, one from a group of professional mariners and one representing commercial fishing interests. Two comments from representatives of marine transportation interests indicated the northwest exit lane was unnecessary and could be a hindrance to tug and barge traffic transiting south along the coast of Vancouver Island. They proposed moving Buoy "J" 5 miles west, and providing a SW traffic lane at about 225°T to allow southbound vessels to exit the lanes sooner. One comment from a representative of marine transportation interests supported the action. The Oil Spill Risk Panel supported the creation of a new exit lane north of Buoy "J".

Discussion:

The alternative exit and entrance lanes to the north proposed in the comments would create unnecessary confusion at this critical juncture and would direct northbound traffic at the shore of Vancouver Island. The placement of aids to navigation (moving Buoy "J") is not a topic of this study, but will be addressed in the future. The proposed exit lane 5 miles offshore at 225°T would offer no distinct advantage over the

action presented as Issue #4c and would impact action presented as Issue #4f. Concerns about the effects of the northern exit lane on tug and barge traffic have been considered and are reflected in our recommendation.

Final Recommendation:

Provide and identify an exit point, not a lane, from the outbound traffic lane north of Buoy "J". This will increase order and predictability by giving formal recognition to existing practice. It recognizes concerns of tug and barge traffic by providing exit point in lieu of exit lane. Unlike departures to the south with an ATBA to be considered, this early northern departure from the outbound lane is possible because there is no ATBA north of the lanes. In compliance with Rule 10 of the COLREGS, tug and barge traffic and fishing vessels southbound for entrance into the Strait may, with concurrence from the CVTS, cross the lanes to enter the south inshore traffic zone.

Comments Received on Issue #4f (expand ATBA boundaries):

We received five written comments on this issue. Three from representatives of environmental groups and one from a group of professional mariners supported the action. One from a representative of marine transportation interests generally supported the action, but recommended modifying the NW corner of

the ATBA to facilitate the transition from N-S to E-W traffic. The Oil Spill Risk Panel supported this recommendation.

Discussion:

All comments supported the proposed action. The recommendation to modify the NW corner of the ATBA was considered and incorporated into our recommended action.

Final Recommendation:

Expand the ATBA boundaries to the north and west. Soften the northwest corner of the ATBA. This will provide a greater buffer around Duntze Rock and offshore. It will also provide a protected route for slower moving vessels and facilitates the transition of traffic from N-S to E-W.

Issue #5:

Should the CVTS agreement be expanded to formally recognize an offshore VTS zone?

Preliminary Discussion:

The United States and Canada administer their respective National Vessel Traffic Management Regulations to the limit of their territorial seas (12 nautical miles). Based on current laws, neither country has the authority to impose a mandatory VTS regime beyond its territorial sea. Under the umbrella of IALA and the IMO, equivalent VTS services are recommended in sea areas adjacent to national VTS systems. Although VTS jurisdiction does not extend beyond 12 nautical miles, vessels

are asked to voluntarily check in with Tofino Traffic Center once north of latitude 48° N, or east of longitude 127° W, or within 50 miles of Vancouver Island. This is known as the CVTS "Service Area" and represents the existing radar coverage of Tofino Traffic Center. Once checked in, vessels are provided with traffic advisories and are actively managed. Check-in points are depicted on the navigational charts, and voluntary compliance is in excess of 99%.

Preliminary Recommendation:

Do not formally create a VTS offshore zone. The CVTS will continue to provide traffic management services on a voluntary basis.

Comments Received:

We received three written comments on this issue. One from a group of professional mariners and one from an environmental organization supported recognition of an offshore VTS zone, and one from a representative of the maritime industry opposed recognition of an offshore VTS zone. The Oil Spill Risk Panel supported this recommendation.

Discussion:

Based on current laws, neither the U.S. or Canada has the authority to impose a mandatory VTS regime beyond its territorial seas (12 nautical miles).

Final Recommendation:

Do not formally create a VTS offshore zone. Vessels are already asked to voluntarily check in with the Tofino Traffic Center when entering the CVTS Service Area (north of latitude 48°N or east of longitude 127°W, or within 50 miles of Vancouver Island). This allows Tofino to provide accurate traffic advisories and to proactively manage traffic.

Issue #6:

Should there be mandatory compliance with the ATBA associated with the Olympic Coast National Marine Sanctuary?

Preliminary Discussion:

The ATBA requests voluntary exclusion of tank vessels or barges carrying oil in bulk or hazardous materials. Vessel track lines have been recorded for potential violations of this voluntary program. For those vessels found within the ATBA and in violation, there has been a high degree of compliance after receiving letters jointly signed by the Manager of the Marine Sanctuary and the local USCG Captain of the Port.

At this time the State/BC Oil Spill Task Force is conducting an Offshore Routing Study. This study will likely recommend coastwise routes that segregate various shipping classes into offshore "lanes" depending on their potential risk to the environment. It will build upon the recommendations of the Monterey Bay National Marine Sanctuary (MBNMS) Vessel

Management Study and provide consistency along the entire West Coast. The recommended realignment of the TSS at the entrance to the Strait of Juan de Fuca and the minor expansion of the ATBA should be consistent with any recommendations of the Offshore Routing Study.

Preliminary Recommendation:

Do not make compliance with the ATBA mandatory. Good voluntary compliance currently exists. The realignment of the TSS at the entrance to the Strait of Juan de Fuca and the minor expansion of the ATBA discussed previously would make it easier for vessels to voluntarily comply. We should continue to market and promote voluntary compliance and closely coordinate the final recommendations of this Port Access Route Study with the Offshore Routing Study.

Comments Received:

We received seven written comments on this issue. A private citizen, Clallam County, and representatives of three environmental organizations all wanted mandatory compliance with the ATBA. One of the environmental groups also wanted the applicability of the ATBA extended to all vessels over 300 GT. A representative of a marine transportation organization and a group of professional mariners wanted compliance with the ATBA to remain voluntary. Because of the high rate of compliance and cooperation by the marine industry, the manager of the Olympic

Coast National Marine Sanctuary (OCNMS) supports voluntary compliance with the ATBA, but reserves the right to revisit the issue in the future.

Discussion:

A recent study conducted by the OCNMS (Olympic Coast National Marine Sanctuary Area to be Avoided Education and Monitoring Program, February 2000) analyzed the effectiveness of voluntary compliance with the ATBA. The study concluded that over 90% of the tank vessels transiting the Sanctuary stay outside the ATBA. Where it was believed that additional education was warranted, copies of track plots were forwarded to owner/operators along with correspondence requesting their voluntary support of the ATBA. Response from the marine industry has been favorable. Voluntary standards and monitoring have achieved a better than 90% compliance rate. Therefore, we believe the risks posed by the target vessels are being effectively mitigated.

Final Recommendation:

The OCNMS ATBA should remain a voluntary routing measure.

Strait of Juan de Fuca - (See Appendix A(2))

Issues #7a through 7c:

Should we-

a. Center the TSS exactly on the International Boundary, and standardize the widths of the separation zone and traffic lanes to a consistent 2000 yards;

b. Soften the inbound dogleg off Twin Rivers from 22 degrees to 8 degrees to make it consistent with the International Boundary; and

c. Establish IMO "Recommended Routes" north and south of the TSS to formally recognize and accommodate the existing traffic patterns?

Preliminary Discussion:

Commercial fishing activity and patterns in the Strait of Juan de Fuca have changed significantly since the TSS was first designed and implemented. Neither PSVTS nor commercial fishing representatives report significant fishing activity in the separation zone. Therefore, the recommended changes to the TSS should not have an unreasonably adverse impact on the fishing industry.

In its current configuration, two thirds of the TSS is located on the United States side of the International Boundary. The separation zone flares to a maximum width of approximately three miles. This TSS alignment reduces the amount of navigable water available to those vessels choosing to transit outbound or inbound south of the TSS, and places inbound traffic following the lanes in closer proximity to land than vessels transiting in

the outbound lanes. Centering of the TSS on the International Boundary and reducing the width of the separation zone will reduce the potential for powered groundings on the U.S. shoreline by creating a larger buffer between the TSS and shore. It also creates additional space for the existing in-shore traffic that transits south of the TSS.

The Canadian Practice Firing Range (Exercise area WH) is located midway in the Strait, and extends south from the shoreline to the International Boundary. This centering change will have minimal impact on the Canadian "WH" firing range, as reported by the Canadian Armed Forces.

The inbound 22° dogleg in the TSS off Twin Rivers has been identified as an occasional contributor to confusion during overtaking evolutions. On extremely rare occasions, the VTS has had to remind vessels to execute the turn. Reducing the inbound dogleg in the TSS from 22° to 8° allows the TSS to be centered on the International Boundary. This in turn would facilitate overtaking situations, and allow for improved traffic flow in the vicinity of Port Angeles. Centering the TSS on the International Boundary and reducing the dogleg would also create more sea room for a vessel to recover or for the VTS to contact them should they miss the turn on the inbound leg. A complete elimination of the dogleg turn was not feasible because it would

have resulted in the TSS being too close to shoal water at certain locations in the Strait.

IMO recognition of two-way "recommended routes" north and south of the traffic lanes would formalize existing traffic patterns and provide additional order and predictability. Formally establishing recommended routes would also help to preserve the TSS for fast moving, deep draft traffic.

Analysis of current traffic patterns in the informal traffic zone south of the TSS revealed that meeting traffic routinely passes starboard to starboard. We will encourage vessels within the informal traffic zone to meet starboard to starboard, which we consider safer than the more traditional port to port meeting recommended by the COLREGS. Starboard to starboard meeting in the informal traffic zone is preferred because it results in the vessel closest to the TSS proceeding in the same direction as a deep draft vessel traveling eastbound in the inbound lane of the TSS. This traffic pattern would minimize the potential of a collision between deep draft vessels following the TSS and outbound vessels following the recommended route. We anticipate that vessels using the inshore recommended route would be habitual or repeat users while those choosing to use the TSS would be first time or less familiar users. For the recommended routes south of the TSS, we propose formalizing the current practice of vessels meeting starboard to starboard. To

avoid unnecessary confusion and to maintain international consistency, we also propose prescribing starboard to starboard meetings for the recommended routes north of the TSS.

Preliminary Recommendation:

That we implement all actions presented as Issues #7a through 7c.

Comments Received on Issue #7a (center TSS on International Border and standardize widths):

We received five written comments on this issue. Three supported the proposal: one from a U.S. pilots' organization, one from a group of professional mariners and one from representatives of marine transportation interests. One from an environmental group proposed a wider separation zone in the Strait to enhance safety. One from a group representing several Native American Tribal Nations was opposed to narrowing the separation zone. They stated that the proposed change would effectively eliminate their seasonal tribal drift net fishery that occurs in the separation zone by restricting the area available in which to set nets. The Oil Spill Risk Panel also supported this recommendation.

Discussion:

The Coast Guard believes that a 2000 yard separation zone represents a safe and prudent buffer between opposing traffic. This position is supported by the large number of international,

national, and regional TSS's with equal or narrower separation zones. With the exception of the tribal drift net fishery, neither PSVTS nor commercial fishing interests report significant fishing activity in the separation zone. Although narrowing the separation zone to 2000 yards reduces the area available for uninterrupted tribal fishing, it does not preclude such activity. The expansion of an RNA presently existing in southern Puget Sound, may be a tool to accommodate the needs of tribal fishing while simultaneously enhancing marine safety. The RNA contained in 33 CFR 165.1301 places operating restrictions on those vessels engaged in activities that may impede the safe passage of vessels following the traffic lanes. It may also place speed restrictions on vessels following the traffic lanes if warranted by hazardous levels of vessel traffic congestion.

Final Recommendation:

Center the separation zone on the International Boundary and standardize the widths of the separation zone and the traffic lanes to a consistent 2000 yards. If tribal fishing remains as an issue, investigate relief through enactment of a RNA or other management procedure. Also, explore changes in fishing procedures that can better co-exist with the recommended changes, such as the use of shorter drift nets. Centering the TSS on the International Boundary and reducing the width of the separation zone is a safety measure designed to keep traffic

furthest from the shore. It will also create additional space for the existing inshore traffic that transits north and south of the TSS.

Comments Received on Issue #7b (soften dogleg):

We received four written comments on this issue. All four supported the proposal: one from a U.S. pilots' organization, one from a group of professional mariners, one from representatives of the marine transportation industry and one from an environmental group. The Oil Spill Risk Panel also supported this recommendation.

Discussion:

Although receiving favorable comment, recommended changes to the action presented as Item #8b require modification to this proposed action. In order for the TSS in the Strait to align with the redefined precautionary area off Port Angeles the dogleg can only be changed from 22 degrees to 15 degrees vice the originally proposed 8 degrees.

Final Recommendation:

Soften the dogleg off Twin Rivers from 22 degrees to 15 degrees. The trade-off between 22 and 15 degrees is that it is no longer possible for the TSS to remain consistent with the International Boundary. However, it will set the TSS up for a smoother transition through the precautionary area off Port Angeles to traffic lanes north of Dungeness Spit leading into

Rosario Strait and Admiralty Inlet. More importantly, it will allow through traffic to be separated from traffic proceeding to the Port Angeles pilots station and keep the recommended route south of the TSS further from shoal water in the vicinity of Angeles Point.

Comments Received on Issue #7c (establish recommended routes):

We received six written comments on this issue. Three from representatives of the marine transportation industry supported the proposal. Two from representatives of the marine transportation industry opposed the proposal as creating safety problems through the imposition of a non-standard meeting protocol, i.e., starboard to starboard vice port to port. One from a representative of an environmental group opposed the establishment of recommended routes, but supported the establishment of inshore traffic lanes for slower moving traffic. The Oil Spill Risk Panel also supported this recommendation.

Discussion:

There are three distinct traffic patterns presently coexisting in the Strait of Juan de Fuca. Larger and faster moving deep draft vessels typically follow the TSS. As contained in other sections of this report, it has been recommended that all VTS participants over 50 meters be required to follow the TSS thus re-inforcing this present practice.

In U.S. waters, many smaller fishing vessels and slower moving tugs and barges choose to avoid the TSS by transiting in the waters to the south of the TSS. Most of this traffic heads south on a coastwise transit after clearing the Straits. By staying south of the lanes, these slower moving vessels avoid having to cross the potentially busy TSS; first to get into the west bound traffic lanes, and then a second time in order to head south to their final destination.

In Canadian waters, a similar situation exists. There are many smaller fishing and slow moving supply vessels that embark on coastwise transits northward along Vancouver Island. These vessels also choose to avoid the fast moving deep draft vessels by transiting to the north of the TSS.

These three different traffic patterns consisting of vessels of disparate speed and size are seldom required to interact with each other. From a safety and traffic management perspective, it is desirable to keep these traffic patterns separated to the greatest extent possible. In fact, the separation of vessels of disparate size and speed has been a stated objective of recent routing measures that have been adopted by the IMO.

One comment suggested the establishment of inshore traffic lanes for slower moving traffic. These "slow" lanes would be outboard of the TSS used by the fast moving deep draft vessels;

the outbound "slow" lane to the north of the TSS and the inbound "slow" lane to the south of the TSS. The PARS study team considered and rejected this proposal because creation of these "slow" lanes would require the slower moving traffic to routinely cross the TSS and interact with fast moving deep draft vessels. This would be contrary to the desired stated objective in the previous paragraph.

The creation of IMO approved recommended routes to the south of the TSS would not only facilitate this existing and desirable traffic pattern, but would also provide the VTS with a traffic routing "tool" for proactively managing this inshore traffic. A charted recommended route provides a common reference point for both the VTS and the vessel and allows for meaningful traffic advisories and recommendations.

Review of actual VTS data and discussion with the U.S. towboat industry confirms that traffic south of the TSS typically passes starboard to starboard, while traffic north of the TSS typically passes port to port. As discussed earlier there are safety reasons for why this starboard to starboard convention has developed south of the TSS.

Several comments expressed concern over the potential confusion created by promoting vessels to pass starboard to starboard. Because this is already the customary practice south of the TSS, providing recommended routes on the chart showing

this starboard to starboard convention should actually reduce any potential confusion.

A related concern expressed by some was that establishing a starboard to starboard passing convention would be a potential violation of Rule 14 of the COLREGS. Two vessels "passing" at a reasonable distance of each other are not necessarily engaged in a "meeting situation" as defined in Rule 14. It is the opinion of the USCG that two vessels following a charted recommended route on reciprocal courses will not normally involve "risk of collision" and therefore rule 14 for "Head-On-Situations" would not apply.

A concern of some regarding the south recommended route was the proximity of oil laden barges to the southern shore of the Strait. It is felt that this concern is mitigated through formal recognition of the practice, more sea room provided by centering the TSS on the international border, and the order and predictability provided by the recommended route. Establishment of a recommended route also assures that the existing inshore traffic remains a minimum distance off-shore. On balance, we believe that allowing oil laden barges to transit along the recommended route created no greater risk than requiring these same barges to transit in the TSS where they will be routinely overtaken by fast moving deep draft vessels.

Canadians' were opposed to the establishment of a recommended route north of the TSS, particularly one that advocated starboard to starboard passing. They maintained that the presently used port to port passing arrangement by vessel's transiting inshore north of the TSS conforms with the COLREGS and therefore, needs no formal recognition or clarification through the establishment of a recommended Route.

Final Recommendation:

Establish an IMO recommended route south of the TSS set up for starboard to starboard passing.

Port Angeles Precautionary Area and North to Discovery Island -

(see Appendix A(3))

Issues #8a through 8e:

Should we-

a. Move the Port Angeles pilot station to a point approximately 1.25 miles north and 1.25 miles east of the tip of Ediz Hook;

b. Redefine the boundaries of the precautionary area as follows:

1. North of Port Angeles, define the western boundary of the precautionary area by linking the southern edge of the inbound traffic lane and the tip of Ediz Hook.

2. Define the eastern boundary of the precautionary area by linking the southern edge of the inbound traffic lane and the tip of Dungeness Spit.

3. Further define the eastern boundary of the precautionary area by linking the southern outbound traffic lane and the northern inbound traffic lane.

c. Establish a VTS special area within the inbound traffic lane between Angeles Point and the Port Angeles pilot station where a vessel will be prohibited from overtaking another vessel without VTS approval;

d. Establish precautionary areas for the turns at Discovery Island and the Victoria pilot station; and

e. Create an inshore buffer by decreasing the width of the TSS leading from the Victoria pilots station to the turn south of Discovery Island while maintaining the same southern boundary of the inbound lane? In addition, we would link the TSS off Discovery Island with the new TSS in Haro Strait.

Preliminary Discussion:

Five TSSs converge at the precautionary areas located to the north and east of Port Angeles. Ferries, recreational vessels, piloted deep draft vessels, non-piloted deep draft vessels, tugs and tows, naval vessels, and large and small commercial fishing vessels all interact and compete for space at this convergence point in the traffic scheme. The present

traffic configuration was designed primarily to deliver inbound vessels to the pilot stations located at Port Angeles and Victoria. The impact on vessel safety or other waterway users may have been overshadowed. For example, the present configuration does not separate the Port Angeles pilots boarding area from either the through traffic following the TSS or the traffic choosing to follow the informal inshore traffic lanes.

The current TSS routing leading to the Port Angeles pilot station has been identified through casualty histories as a substantial cause for concern. Vessels bound for the Port Angeles pilot station are required by the TSS to steer almost directly on Ediz Hook. Vessels must first execute a 60-degree turn, then slow to varying speeds, which creates different impacts on steerage, to pick up a pilot. At this point a vessel may be particularly vulnerable to currents and seas. If an engineering failure occurred during this evolution, the vessel would be at risk of a drift or powered grounding on Ediz Hook. By moving the pilot station we can minimize the number of sharp turns vessels must make when entering and leaving the precautionary area off Port Angeles. The move also eliminates the requirement for a vessel to steer directly on Ediz Hook while maneuvering to pick up a pilot, and allows through traffic to avoid the pilot boarding area.

On the Canadian side, outbound tugs and barges exit the TSS at Discovery Island and head directly for the inshore routes south of Race Rocks cutting across the inbound and outbound TSS lanes south of Victoria. Outbound fishing vessels exiting Baynes Channel or passing east of Discovery Island attempt to stay north of the TSS but often infringe upon the lanes near Trial Island, Discovery Island, and the pilot station. Creating a buffer zone north of the Victoria TSS would allow fishing vessels and other small, slow moving vessels to transit directly between Discovery Island and Race Rocks then inshore north of the TSS.

An issue unrelated to the TSS configuration is the behavior of unpowered vessels inbound from sea approaching the Port Angeles precautionary area. On occasion, an inbound vessel does not complete overtaking evolutions before entering the precautionary area. Results of an incomplete evolution include either imprudent speeds, or a vessel attempting to cross ahead of a vessel it has just passed. When this occurs, the VTS often must intervene and issue directions to the vessels. Establishing a VTS special area within the inbound traffic lane increases the predictability of vessel movements within the Port Angeles precautionary area by prohibiting overtaking maneuvers.

Preliminary Recommendation:

That we implement all actions presented as Issues #8a through 8e.

Comments Received on Issue #8a (move Port Angeles pilot station) **and #8b** (redefine the boundaries of the precautionary area):

Because issues #8a and #8b (1-3) are interrelated, with each change in one affecting the other, we decided to address them as a single issue. Comments are grouped according to the original delineations, but many comments included proposals that simultaneously affected both of the original issues.

We received six written comments on the location of the pilot station that impacted on precautionary area boundaries: one from a group of professional mariners, one from a U.S. pilots' organization, one from a representative of the maritime industry, and one from a representative of an environmental organization, one from a state government agency, and one from a representative of deep draft marine transportation.

All but one endorsed moving the pilot station various distances further offshore: one felt the existing location was functioning satisfactorily. Two recommended a different distance for the relocation. Three did not specify a distance and one agreed with the proposed distance. The pilots expressed concern over a possible increase in boarding risk associated

with moving the boarding area further north into the Strait of Juan de Fuca.

We received four written comments on precautionary area boundaries and traffic flow which significantly impacted the location of the pilot station. One from a representative of deep draft marine transportation interests supported the proposal. One from a marine towing company felt the proposed change would force outbound tug and barge traffic to travel too close to land when entering the proposed southern recommended route. Two disagreed with the proposal and offered counter proposals which would separate traffic picking up, or dropping off, a pilot from through traffic not requiring the services of a pilot: one from a group of professional mariners and one from a U.S. pilots' organization. At a subsequent user outreach meeting with a technical advisory group of experts from the marine transportation industry and PSVTS a refined hybrid proposal was presented. The Oil Spill Risk Panel supported the original proposal to redefine the boundaries of the precautionary area off Port Angeles.

Discussion:

The primary objectives in redefining the boundaries of the Port Angeles Precautionary Area and the TSS in the Strait, and moving the Port Angeles pilot station, were to: eliminate the need for incoming deep draft vessels to steer directly toward

shoal water as they approached the pilot station, separate through traffic from traffic stopping at the pilot station, facilitate the safe passage through the area of traffic following the inshore route, and maintain the safety of pilots during embarkation/debarkation.

The preliminary study recommendations accomplished these goals but did not create dedicated traffic lanes to separate through traffic and traffic bound to the pilot station. Almost all comments recognized the need to move the pilot station some distance further offshore to enhance vessel safety during pilot embarkation/debarkation.

The hybrid alternative proposal subsequently presented by the technical advisory group redirected inbound traffic to the pilot station away from shoal water and provided separate through lanes for inbound and outbound traffic not needing to stop at the pilot station. Upon consideration, it was decided that the through lane scheme best met our objective of traffic separation. The concern of the marine towing company about outbound tug and barge traffic being forced to travel too close to land when entering the proposed recommended route has been addressed by moving the pilot station further to the north, and changing the orientation of the traffic lanes leading into the Port Angeles Precautionary Area.

Final Recommendation:

Move the pilot station to a position approximately 1.4 miles NNE of the radio beacon at the tip of Ediz Hook and center it in a .5NM radius circle aligned with the center of the separation zone dividing inbound/outbound traffic to the pilot station. This position is in close proximity to that recommended by the group of professional mariners and the pilots' organization during an outreach meeting and will not expose the pilots to any greater boarding risk. Moving the pilot station further offshore will allow more room for vessel maneuvering; allow the traffic lanes to be realigned so that vessels aren't required to steer on the tip of Ediz Hook during the pilot boarding evolution; and facilitate entry into the recommended route south of the TSS. Creation of a boarding "circle" as opposed to a boarding "point" better informs mariners where they can expect to encounter vessels maneuvering to pick up or drop off a pilot. Some of the comments that did not specify a distance to move the pilot station seemed to imply a desire to move the pilot station north a distance of four to five miles. We considered this but rejected it for not allowing us to achieve the objective of separating the piloted from non-piloted vessels, as discussed in the following paragraph.

Implement the actions presented as Issues 8b(1)-(3) and, with minor changes, adopt the hybrid proposal to establish

through lanes with a separation zone for incoming and outgoing traffic not stopping at the pilot station. These lanes will be aligned with the traffic lanes to the east and west of Port Angeles. This configuration will minimize the risk of collision between through traffic and traffic en route to the pilot station, while simultaneously minimizing the risk of powered and drift groundings on Ediz Hook. The hybrid proposal for Issue #8b(1) defined the western edge of the precautionary area as linking the southern edge of the inbound traffic lane with the center of Ediz Hook. This portion of the proposal was rejected because it would have allowed vessels picking up or dropping off a pilot to steer towards shoal water.

Comments Received on Issue #8c (VTS special area):

We received five written comments on this issue. Two disagreed with the establishment of a VTS special area and suggested that VTS should only provide information: one from a group of professional mariners and one from a U.S. pilots' organization. One from a representative of marine transportation interests agreed with the establishment of a VTS special area and recommended that it prohibit east bound vessels from overtaking when within five miles of the "Port Angeles Rotary" (precautionary area off Port Angeles). One from an association representing recreational boaters agreed with the establishment of a VTS special area provided it applies only to

vessels subject to the Vessel Movement Reporting System. The Oil Spill Risk Panel also supported this recommendation.

Discussion:

This issue was discussed at an outreach meeting with a technical advisory group composed of experts from the marine transportation industry and PSVTS. Opposition to the no overtaking area was based upon vessels not being in the maneuvering mode, hence unable to slow down. It was agreed that a maneuvering zone, similar to that existing in San Francisco, should be established wherein all vessels must be fully maneuverable. With this additional provision, the group also endorsed the recommendation to create a no-overtaking zone.

Final Recommendation:

Establish a VTS special area similar to that existing in San Francisco where all vessels participating in the Vessel Movement Reporting System must have their engine(s) in a control mode and on fuel that will allow for immediate response to any engine order, ahead or astern, including stopping its engine(s) for an extended period of time. The western boundary of the Special Area should be at 123°-35'W and the eastern boundary at 123°-20'W. In addition, inbound vessels must complete all passing maneuvers prior to entering the Port Angeles Precautionary Area. Vessels entering the TSS from sea generally have their engines in a computerized steaming mode and are

unable to readily reduce speed for maneuvering. By requiring a switchover from steaming mode to maneuvering mode and requiring overtaking maneuvers to be completed well before entering the Port Angeles precautionary area assures that vessels are under positive control before entering this dynamic area of meeting, crossing and converging traffic.

Comments Received on Issue #8d (precautionary area at Discovery Island and the Victoria pilot station):

We received one written comment on this issue. A representative of marine transportation interests supported the establishment of precautionary areas at Discovery Island and the Victoria pilot station.

Discussion:

At an outreach meeting, a representative of a Canadian pilots' organization recommended enlarging the recommended precautionary area north of the Victoria pilot station to accommodate vessels maneuvering to embark/disembark a pilot. It was also recommended that a routing "exit arrow" be added to the precautionary area at Discovery Island, and a corresponding "entry arrow" into the Port Angeles precautionary area to allow vessels to by-pass the Victoria pilot station if they were not picking up or dropping off a pilot. These changes are reflected in the final recommendation. There were no negative responses to the recommended actions.

Final Recommendation:

Implement the actions presented as Issue #8d. This will enhance order and predictability in these high usage areas.

Comments Received on Issue #8e:

We received one written comment on this issue. A representative of marine transportation interests supported the creation of an inshore buffer and linking the TSS's. ;

Discussion:

The inshore buffer zone will provide increased separation between deep draft vessels following the TSS and smaller fishing vessels and other slow moving shallow draft vessels that routinely transit north of the TSS. There were no negative responses to the recommended actions and they were fully supported by the CVTS Traffic Center with responsibility for managing traffic in this area. These actions were also favorably received at several outreach meetings with the Canadian maritime industry.

Final Recommendation:

Implement the action presented as Issue #8e. This will enhance order and predictability and allow fishing vessels and other slow moving vessels to transit directly between Discovery Island and Race Rocks then inshore north of the TSS.

Haro Strait and Boundary Pass - (See Appendix A(4), (5))

Issues #9a through 9d:

Should we-

- a. In Haro Strait and Boundary Pass, establish a two-way traffic lane similar to the one presently existing in Rosario Strait;
- b. Establish a 2-mile diameter precautionary area centered on Turn Point to manage the merging traffic from several secondary channels in the vicinity of Turn Point;
- c. Designate the U.S. waters of this precautionary area as a VTS special area as defined in 33 CFR 161.13 where VTS users would not be allowed to meet, cross or overtake without the prior permission of the CVTS; and
- d. Through the Joint Coordinating Group of the CVTS, modify the existing Turn Point Tanker Safety Area to adopt the same special area provisions in Canadian waters?

Preliminary Discussion:

Turn Point is one of the more navigationally challenging areas of Haro Strait and Boundary Pass. Transiting vessels must negotiate a blind right-angle turn at varying distances from shore depending on their direction of travel and the presence of strong currents. In addition, numerous secondary channels and passages route traffic into Haro Strait in the vicinity of Turn Point.

Neither designated traffic routes nor formal vessel routing measures are in effect except for the "Turn Point Tanker Safety Area." This CVTS measure requires loaded tankers of 40,000 DWT or greater to make passing arrangements on channel 11 and to "take every precaution to maintain a safe CPA" when transiting in the vicinity of Turn Point.

By establishing a formal traffic lane, the provisions of Rule 10 of the COLREGS would apply. Rule 10 directs certain smaller vessels to not impede the passage of a vessel following a traffic lane. Establishment of a formal traffic lane and its inclusion on navigational charts will also increase order and predictability by reminding non-participants where to expect fast moving, deep draft vessels.

A generous precautionary area at Turn Point will provide vessels maximum flexibility to maneuver as they compensate for the strong currents present. The creation of a VTS special area centered on Turn Point will also promote safe marine practices by eliminating the meeting of vessels at a sub-optimal location in the traffic scheme. Further, establishing the same provisions in Canadian waters will ensure international uniformity.

Preliminary Recommendation:

That we implement all actions presented as Issues #9a through 9d.

Comments Received on Issue #9a (establish two-way traffic lane):

We received twenty-three written comments on this issue. Two gave unqualified support for the action presented as Issue 9a: one from representatives of the maritime industry and one from a Canadian pilots' organization. Two supported the action, but recommended moving the edge of the lane to the east from Kellet Bluff to Turn Point to create a wider lane that would accommodate normal traffic patterns for vessels transiting northward: one from a group of professional mariners and one from a U.S. pilots' organization. Two from different groups representing Canadian marine interests supported the action because of the COLREG Rule 10 protection it would provide. Three from environmental organizations supported the establishment of a two-way traffic lane, but only if it was moved further from the western shore of San Juan Island. Nine neither supported nor opposed the proposal, but all wanted the recommended traffic lane moved a non-specified distance further off the west shore of San Juan Island: five residents of San Juan Island, a representative of San Juan County government, one charter boat company, one environmental organization, and one scientific organization. Four wanted the recommended traffic lane moved one to two miles off the west shore of San Juan Island: three residents of San Juan Island and a marine research organization. One resident of San Juan Island was opposed to

the recommended action, but provided no rationale. At an outreach meeting, a representative of a Canadian pilots' organization modified their support to include widening the lane to the east from Kellet Bluff to Turn Point to provide northbound vessels a lee from the strong ebb currents south of Turn Point.

Discussion:

The creation of a two-way traffic lane would establish order and predictability where none currently exist. It would provide Rule 10 of the COLREGS protection in these waters which should increase safety and help prevent a deep draft vessel following the lane from having to take dramatic maneuvers that could result in a collision or grounding. The lane would assure that VTS participants remain a minimum distance off-shore (where now there is no minimum) while still allowing vessels the flexibility to compensate for natural forces and navigate safely. The reasoning given for moving the edge of the recommended lane to the east from Kellet Bluff to Turn Point is that it would allow vessels following the lane to avoid heavy current during a strong ebb tide. Reasons given for the lane in Haro Strait to be further off the west shore of San Juan Island reflected concerns that, if established as recommended, large vessels would transit close to shore and be in conflict with

small craft engaged in whale watching and other recreational pursuits.

Final Recommendation:

Implement the action presented as Issue #9a. The establishment of a two-way traffic lane will increase order and predictability to vessel traffic in these waters. By establishing a formal traffic lane the provisions of Rule 10 of the COLREGS would apply. We considered the concerns over the interactions of deep draft and tug and barge traffic with the smaller private and charter vessels operating in the inshore areas of Haro Strait off the west shore of San Juan Island. We also considered the concerns about deep draft vessels transiting in close proximity to the west shore of San Juan Island. In response to these concerns we moved the lane further to the west to provide a greater buffer between the edge of the lane and the west shore of San Juan Island. Also, in response to the recommendations of U.S. and Canadian pilots' organizations and the group of professional mariners we moved the edge of the lane to the east from Kellet Bluff to Turn Point and created a flair, or pull out, south of Turn Point to afford maneuvering room for a vessel to safely negotiate a strong ebb current.

Comments Received on Issue #9b (two-mile diameter precautionary area):

We received seven written comments on this issue. A Canadian pilots' organization had no concerns with establishment of the precautionary area. A U.S. pilots' organization and a group of professional mariners concurred with establishment of the precautionary area. A representative of marine transportation interests supported the establishment of a precautionary area. Two groups, representing Canadian marine interests neither concurred with, nor objected to, the establishment of a precautionary area, but recommended that participants of the TSS indicate, as they pass abeam of Danger Shoal or Gowland Point, their anticipated distance off and ETA for rounding Turn Point. They further recommended that all crossing, meeting, or overtaking traffic should communicate their intentions to conflicting traffic on the prescribed VTS channel. An environmental organization agreed with the precautionary area if lanes are to be established.

Discussion:

There were no objections to the action presented as Issue #9b. The recommendations of Canadian marine interests for radio communication between vessels in the vicinity of Turn Point to pass various navigational maneuvering information will be discussed in Issues #9c and d.

Final Recommendation:

Implement the action presented as Issue #9b. The establishment of a precautionary area is appropriate for this navigationally challenging area where vessels must negotiate a sight obscured right-angle turn in the presence of strong currents and numerous small craft.

Comments Received on Issue #9c (designate U.S. waters of Turn Point a VTS special area):

We received eight written comments on this issue. Four disagreed with the VTS Special Area designation and associated regulations: one from a U.S. pilots' organization, one from a group of professional mariners, and two from representatives of the Canadian maritime industry. One from a representative of marine transportation interests was in support of the VTS special area designation. Three gave provisional favor to the designation: one from a Canadian pilots' organization, one from an environmental organization, and one from a representative of recreational boating interests.

Discussion:

Comments in opposition to the VTS Special Area and regulations cited lack of evidence that Turn Point needed to be further regulated and the dangers created by vessels slowing down and queuing to comply. Concern was also expressed over the perception that shore side CVTS personnel would be assuming

operational control of vessels in order to obtain compliance with the special area regulations. The action of vessels meeting in the proximity of this right-angle turn with a restricted sight line, strong currents, and in the presence of numerous small craft creates an unusually hazardous situation. For these reasons, the CVTS remains of the opinion that the prudent mariner should not knowingly meet in this area. Given these known conditions, it is the CVTS's intention to implement reasonable operational measures to reduce the likelihood of a marine casualty in this critically interactive area.

Significant changes have been made to the preliminary recommendations based on extensive discussions among the U.S. Coast Guard, Canadian Coast Guard, Transport Canada, and members of the Canadian maritime industry. The original recommendation would have required all VTS users, as defined in 33 CFR 164, to "not meet, cross, or overtake any other VMRS user in the area without prior approval of the VTS". This would have included slow moving tugs and vessels as small as 20 meters. Upon detailed review of actual vessel transit data, it was determined that this level of compliance would have resulted in dangerous queuing, vessels possibly losing steerageway, and unacceptable delays to shipping. To address this, the size threshold for compliance was increased to 100 meters. This will increase

safety for the larger vessels that represent the greatest risk to the environment.

The original recommendation directed vessels to not "meet, cross, or overtake" within the VTS special area. To avoid confusion over determining exactly when a meeting or crossing situation exists, the final recommendation has been modified. The final recommendation simply states that a VTS participant of 100 meters or more in length shall not enter the special area when another VTS participant of 100 meters or more in length is already located in the special area unless following astern on a similar course. When following astern, it must maintain a minimum 1,000 yard separation with the vessel ahead. Under the original recommendation the provisions of the VTS special area regulation would be applied within the two mile precautionary area recommended as Issue #9b. Analysis of historical vessel transit tracks revealed that this area could be reduced in size without any loss in collision avoidance and would be more effective in eliminating undesired vessel maneuvers. The final recommendation is to reduce the originally recommended VTS special area to a 135 degree sector centered on Turn Point and extending 3,400 yards to the northwest and southwest (see Appendix A(5)). This sector is of sufficient size to assure that vessels will complete their turn at Turn Point and steady on a new course before meeting another large vessel.

Other changes to the preliminary recommendations are the addition of provisions of the VTS special area regulations contained in 33 CFR 161.13. Specifically, we have added the requirement for vessels towing astern to shorten their towing hawser as much as safety and good seamanship permits; and all VTS participants approaching Turn Point will be required to communicate their intended navigation movements on the VTS working frequency.

Rather than establishing these special operating requirements under the U.S. National VTS regulations, we recommend establishing them as a CVTS Operating Procedure entitled Turn Point CVTS Special Operating Area (SOA). This recognizes that for these operating measures to be effective, they must apply equally to U.S. and Canadian waters. A CVTS Operating Procedure is the fastest and most effective way of accomplishing the desired result and is similar in approach to the existing CVTS Turn Point Tanker Safety Zone.

The designation of a CVTS Special Operating Area (SOA) will promote safe marine practices by eliminating meeting situations by larger classes of vessels at this sub-optimal location in the traffic scheme. Analysis of transit data shows that on average only a few vessels per day would have to modify their transits to comply, and that the worst case impact would be a 20 minute delay. We do not consider this to be a significant impact on

the marine industry. These operational measures will not normally require shore-side VTS personnel to give specific directions to a vessel. CVTS will provide participating vessels with timely traffic advisories so that the professional mariner can take appropriate action to comply with the operational measures. Early and proactive communication and action by vessel operators, based on the information provided by the CVTS will assure that vessels are not forced into queuing situations with a potential for loss of steerageway.

Final Recommendation:

Establish a CVTS Turn Point Special Operating Area (SOA). A draft of the recommended Turn Point SOA procedures is included as Appendix B to this report.

Comments Received on Issue #9d (modify existing Turn Point Tanker Safety Area):

We received four written comments on this issue. One from a U.S. pilots' organization and one from a group of professional mariners disagreed with the action presented as Issue #9d. Two supported the action presented as Issue #9d: one from a representative of marine transportation interests and one from an environmental group.

Discussion:

Opposition to the action presented as Item #9d was based upon the same rationale as opposition to Item #9c.

Final Recommendation:

This recommendation has effectively been combined into the action recommended for Issue #9c.

Rosario Strait - (See Appendix A(6))

Issues #10a and 10b:

Should we-

- a. Extend the precautionary area "RB" southward into the existing traffic lanes which would eliminate that portion of the separation zone that the large vessels are unable to avoid; and
- b. Expand the applicability of the existing Rosario/Guemes Channel VTS special area regulations contained in 33 CFR 161.55 to include all adjacent waters through which loaded or light tankers have historically transited? These waters would include Bellingham Channel and the navigable channels northeast of Guemes and Sinclair Islands, which connect the refineries at Anacortes and Cherry Point.

Preliminary Discussion:

Deep draft vessels often cannot precisely follow the TSS when approaching Rosario Strait from the south. Strong currents make it impossible for vessels to avoid the separation zone as they negotiate the slight turns in the TSS just south of precautionary area "RB". We could not eliminate the small turns in the TSS approaching precautionary area "RB" without placing the TSS uncomfortably close to other shoal water. We believe

the safety of deep draft transits would be enhanced by eliminating a routing measure with which large ships cannot comply and replacing it with a precautionary area "where ships must navigate with particular caution."

The PSVTS special area regulations contained in 33 CFR 161.55 are only applicable to certain categories of vessels operating in Rosario Strait and Guemes Channel, and they modify the generic VTS special area regulations contained in 33 CFR 161.13. These special area regulations were promulgated in recognition of the size and potential risks associated with tankers transiting Rosario and Guemes Channels en route to the refineries located at Anacortes and March Point. However, loaded and light tankers will also occasionally transit Bellingham Channel and the waters northeast of Guemes/Sinclair Island as an alternate route to the refineries or to reach the anchorage at Vendovi Island.

Currently, the VTS special area regulations do not apply to these secondary navigational channels which are arguably equally or more navigationally challenging than Guemes and Rosario Channels. These recommendations would further enhance safety by expanding the Rosario/Guemes Special Area regulations to adjacent waters that have equal or greater risk and are frequented by both loaded and light tankers.

Preliminary Recommendation:

That we implement all actions presented as Issues #10a and 10b.

Comments Received on Issue #10a (extend precautionary area "RB"):

We received four written comments on this issue. A U.S. pilots' organization, a group of professional mariners, a representative for deep draft navigation interests and a representative for an environmental organization were all in favor of the action presented as Issue #10a. The Oil Spill Risk Panel also supported the action presented as Item #10a.

Discussion:

There was no opposition to the action presented as Item #10a.

Final Recommendation:

Implement the action presented as Issue #10a. The safety of deep draft transits will be enhanced by eliminating a routing measure with which large ships cannot comply and replacing it with a precautionary area "where ships must navigate with particular caution".

Comments Received on Issue #10b (expand the applicability of the Rosario Strait/Guemes Channel VTS special area):

We received seven written comments on this issue. One from a representative of deep draft navigation interests and one from

an environmental organization supported the action presented as Issue #10b. One from a U.S. pilots' organization, one from a group of professional mariners and one from a representative of recreational boaters disagreed with the action presented as Issue #10b. One from an environmental organization and one from a research organization neither agreed nor disagreed with the action, but recommended that tankers be excluded from Bellingham Channel and associated waters.

Discussion:

Comments in disagreement to expanding the applicability of the existing Rosario Strait/Guemes Channel VTS Special Area regulations indicated that the existing system is working well; participating vessels experience no difficulty and the existing system provides users flexibility that a formal system would prohibit. Comments in agreement and comments recommending exclusion of tankers from Bellingham Channel and the navigable channels northeast of Guemes and Sinclair Islands generally advocated that these actions would provide increased protection to marine areas of particularly high value.

It should be noted that the PSVTS special area regulations for Rosario Strait and Guemes Channel apply to certain sizes of vessels and are not limited to petroleum tankers. Expansion of this rule to Bellingham Channel would make it applicable to the deep draft traffic transiting to and from the Port of

Bellingham. It is our opinion that with suitable operating procedures in place deep draft vessels can safely navigate Bellingham Channel and associated waters northeast of Sinclair and Guemes Islands. As a matter of current policy, the VTS does not allow large vessels to meet in these waters.

During various outreach meetings, professional mariners acknowledged that they would not knowingly meet another vessel in these restricted waters. The proposed action would simply institutionalize the sound marine practice that is already taking place.

Final Recommendation:

Implement the action presented as Item #10b. The action presented as Issue #10b will further enhance safety by expanding the Rosario/Guemes Special Area regulations to adjacent waters that have an equal or greater risk.

Strait of Georgia - (See Appendix A(7))

Issues #11a and 11b:

Should we-

a. Modify slightly the existing TSS and establish a set of traffic lanes to align and connect the two TSSs; and

b. Establish precautionary areas east of East Point at the junction of the new Boundary Pass traffic lane and Strait of Georgia TSS, and west of Delta Port and the Tsawwassen Ferry Terminal?

Preliminary Discussion:

There has been an increase in traffic from Delta Port and the Tsawwassen Ferry Terminal which poses a risk of collision as departing vessels enter the TSS and build to sea speed. In addition, there is no routing measure connecting the TSS that terminates off Patos Island with the TSS that terminates off Saturna Island. Further, these two TSSs are not aligned. Traffic exiting the Strait of Georgia bound for Rosario Strait follows the TSS to its termination before angling back to the north to enter the TSS at Patos Island. This vessel routing crowds and creates a possible conflict with traffic southbound for Boundary Pass. Finally, there is no precautionary area in the vicinity of East Point, where traffic merges from several directions. By providing a contiguous TSS that connects the new Boundary Pass traffic lane with the existing or modified TSS in the Strait of Georgia, and establishing a contiguous TSS connecting the old Patos Island TSS and the Georgia Strait TSS, traffic bound for Rosario Strait could follow the TSS without impeding traffic southbound for Boundary Pass.

A new precautionary area southwest of Delta Port would accommodate vessels departing Delta Port and the Tsawwassen Ferry Terminal as they get up to maneuvering speed before and while entering the TSS.

A new precautionary area around East Point would provide logical connection to three converging traffic lanes. It would also highlight the need for potential crossing traffic in this area to exercise caution and will provide tankers departing Cherry Point bound for Haro Strait with a predictable and safe location to enter the traffic scheme.

Preliminary Recommendation:

That we implement all actions presented as Issues #11a and 11b.

Comments Received on Issue #11a (modify existing TSS):

We received six written comments on this issue: one from a U.S. pilots' organization, one from a Canadian pilots' organization, one from a group of professional mariners, one from a representative for deep draft navigation interests, and two from representatives of the Canadian maritime community. All were in support of the action presented as Item #11a. The Oil Spill Risk Panel also supported the action presented as Item #11a.

Discussion:

There was no opposition to this action. However, we did receive several suggestions on how to improve the orientation/shape of both the lanes and the separation zone to further enhance traffic flow and facilitate the safe transit of

deep draft vessels turning south at East Point. These suggestions are reflected in the final recommendation.

Final Recommendation:

Implement the action presented as Item #11a. This action will align the TSS in the Strait of Georgia with the TSS north of Rosario Strait and allow for smoother traffic flow and less conflict for vessels transiting southeasterly straight through to Rosario Strait with vessels departing southwesterly for transit southward through Boundary Pass.

Comments Received on Issue #11b (establish precautionary areas):

We received six written comments on this issue: one from a U.S. pilots' organization, one from a Canadian pilots' organization, one from a group of professional mariners, one from a representative for deep draft navigation interests, and two from representatives of the Canadian maritime community. All supported the action presented as Item #11b.

Discussion:

There was no opposition to this action. However, we did receive several suggestions on how to improve the shape of the precautionary areas to better accommodate the merging of traffic.

Final Recommendation:

Implement the action presented as Item #11b. A new precautionary area southwest of Delta Port will accommodate

vessels departing Delta Port and the Tsawwassen Ferry Terminal as they get up to maneuvering speed before and while entering the TSS. A new precautionary area around East Point will provide logical connection to three converging traffic lanes. It will also highlight the need for potential crossing traffic in this area to exercise caution and will provide tankers departing Cherry Point bound for Boundary Pass and Haro Strait with a predictable and safe location to enter the traffic scheme.

V. NEW ISSUES

During the course of the study several issues developed which were not presented in the preliminary study recommendations published in the Federal Register (65 FR 8917).

Issue #12:

Should we extend the voluntary applicability of the Olympic Coast National Marine Sanctuary ATBA to all vessels of 1,600 GT or greater that are transiting through the area?

Comments:

Several comments to the docket suggested an expansion of the applicability of the ATBA to include vessels that carried substantial amounts of bunker fuel. The Sanctuary Manager recommended that the applicability of the ATBA be expanded to include all vessels equal to or greater than 1,600 GT that are transiting through the area. The Manager also submitted a study in support of expanding the applicability. The North Puget

Sound Long-Term Oil Spill Risk Management Panel, in recommendation 22, recommended that the USCG, in cooperation with NOAA, should "Expand the applicability of the ATBA from only tank vessels and barges carrying petroleum or hazardous material in bulk, to other deep draft vessels".

Discussion:

The present IMO adopted Olympic Coast National Marine Sanctuary ATBA applies only to tank vessels and barges carrying petroleum, oil, or hazardous materials in bulk, and is voluntary in nature. The bunker capacity of a typical merchant vessel is 81,000 gallons. As a point of reference, the size of the 1999 spill by the M/V New Carissa (a bulk carrier) was 70,000 gallons. This amount of oil represents a significant risk to Sanctuary resources. Requiring all vessels of 1,600 GT or greater to transit outside the ATBA would move these vessels farther off shore, thereby increasing the time available to respond to a propulsion or steering casualty and decreasing the potential for a drift or powered grounding. If there was a discharge of oil, the increased distance off shore would diminish the impact on the shoreline and provide more time to mobilize a response.

The threshold of 1,600 GT has previously been accepted by IMO as being reasonable. Furthermore, vessels of 1,600 GT or greater are usually large enough to safely maneuver in most

weather conditions. Due to the voluntary nature of the ATBA, vessels have the option of entering the ATBA in extreme weather conditions if necessary for safety considerations.

Recommendation:

Extend the voluntary applicability of the Olympic Coast National Marine Sanctuary ATBA to all vessels of 1,600 GT or greater that are transiting through the area. This is in addition to the current restriction regarding the transportation of petroleum products or hazardous materials in bulk form as cargo.

Issue #13:

Should we harmonize/align more closely the U.S. and Canadian VTS participation requirements?

Comments:

The Oil Spill Risk Panel, in recommendation 10, recommended that "The Coast Guard should review current requirements for vessel participation in the U.S./Canadian Cooperative Vessel Traffic System (CVTS) with an eye toward aligning more closely with Canadian requirements. In an effort to reduce potentially conflicting operations all vessel traffic greater than 20 meters in length should be required to actively participate in the CVTS".

Discussion:

The United States and Canada jointly manage vessel traffic in the boundary waters of the Strait of Juan de Fuca, Haro Strait, and Boundary Pass pursuant to the Cooperative Vessel Traffic Service (CVTS) Agreement. Under this international agreement, vessels operating in U.S. waters are managed pursuant to the United States National VTS regulations, and while operating in Canadian waters they are managed pursuant to the Canadian National VTS regulations.

Under the U.S. VTS Regulations, all vessels greater than 40 meters, along with certain other vessel categories, must fully or "actively" participate with the CVTS. Vessels between 20 meters and 40 meters, along with certain other vessel categories, are "passive" participants. A "passive participant" must guard the appropriate VTS working frequency, and respond when hailed by the CVTS. However, they are not required to participate in the Vessel Movement Reporting System required by 33 CFR Part 161. In Canadian waters, all vessels greater than 20 meters, along with certain other sub-sets, must fully participate with the CVTS.

The service provided by the CVTS is recognized as world class, and is considered a cornerstone of the safety system for the affected waters. However, this inconsistency in the level of vessel participation is of concern. For example, when a 20

meter vessel gets underway from a U.S. port, it is not required to check in with the local VTS. When that vessel crosses over into Canadian waters, that vessel becomes a mandatory full participant of the CVTS under the Canadian rules. This inconsistency in the level of applicability has the potential to create unnecessary confusion, and diminish the quality of the traffic advisories provided to other full participants.

When the U.S.VTS regulations were modified in 1994 an intended goal was to standardize the regulations in all U.S. ports, including the level of participation. The rationale was to simplify compliance for vessels that called at multiple U.S. ports. Although a commendable objective, this overlooked the unique nature of the CVTS. The potential confusion created by having two different participation levels in the same waterway far exceeds the confusion of having different participation levels in geographically separated ports.

The potential workload increase of lowering the participation for "active" participation from 40 meters to 20 meters needs to be considered. However, the pending implementation of required carriage of Automatic Identification Systems (AIS) may off-set this increase in workload. In fact, preliminary indications are that all vessels subject to the Vessel Bridge-To-Bridge Radiotelephone Regulations will be required to carry AIS while transiting in U.S. waters. The

Radiotelephone Regulations apply to all power driven vessels of 20 meters or more in length, along with some other vessel categories. Carriage of AIS should mitigate most workload concerns. Use of AIS will also assure that smaller vessels between 20 and 40 meters can reliably be detected and tracked by the CVTS Sector Operators.

Recommendation:

Initiate action to harmonize/align U.S. and Canadian VTS participation levels for CVTS waters taking into consideration the evolving requirement for domestic carriage of AIS. Where possible choose the lower thresholds if technology and staffing permits. Implementation should be timed to coincide with the implementation of the AIS carriage requirements in order to mitigate an increase in VTS workload and to assure reliable detection and tracking of smaller vessels that may not be reliably detected by current radar technology.

VI. CONCLUSIONS

This Port Access Route Study contains a number of recommendations which will be implemented in various ways by U.S. and Canadian Authorities. Most of them will provide opportunity for further public comment. The following provides a brief synopsis of how the various proposals will proceed towards implementation:

1. Recommended changes to the Traffic Separation Scheme (TSS), the Area to be Avoided (ATBA), and Recommended Routes will require approval by the International Maritime Organization (IMO). In addition, any change to the TSS will require regulatory action for codification in the Code of Federal Regulations (CFR).

2. Changes to the U.S. VTS Regulations, including the designation of a VTS special area with associated rules will require regulatory action for codification in the CFR.

3. The designation of a Regulated Navigation Area (RNA) with associated rules will require regulatory action for codification in the CFR.

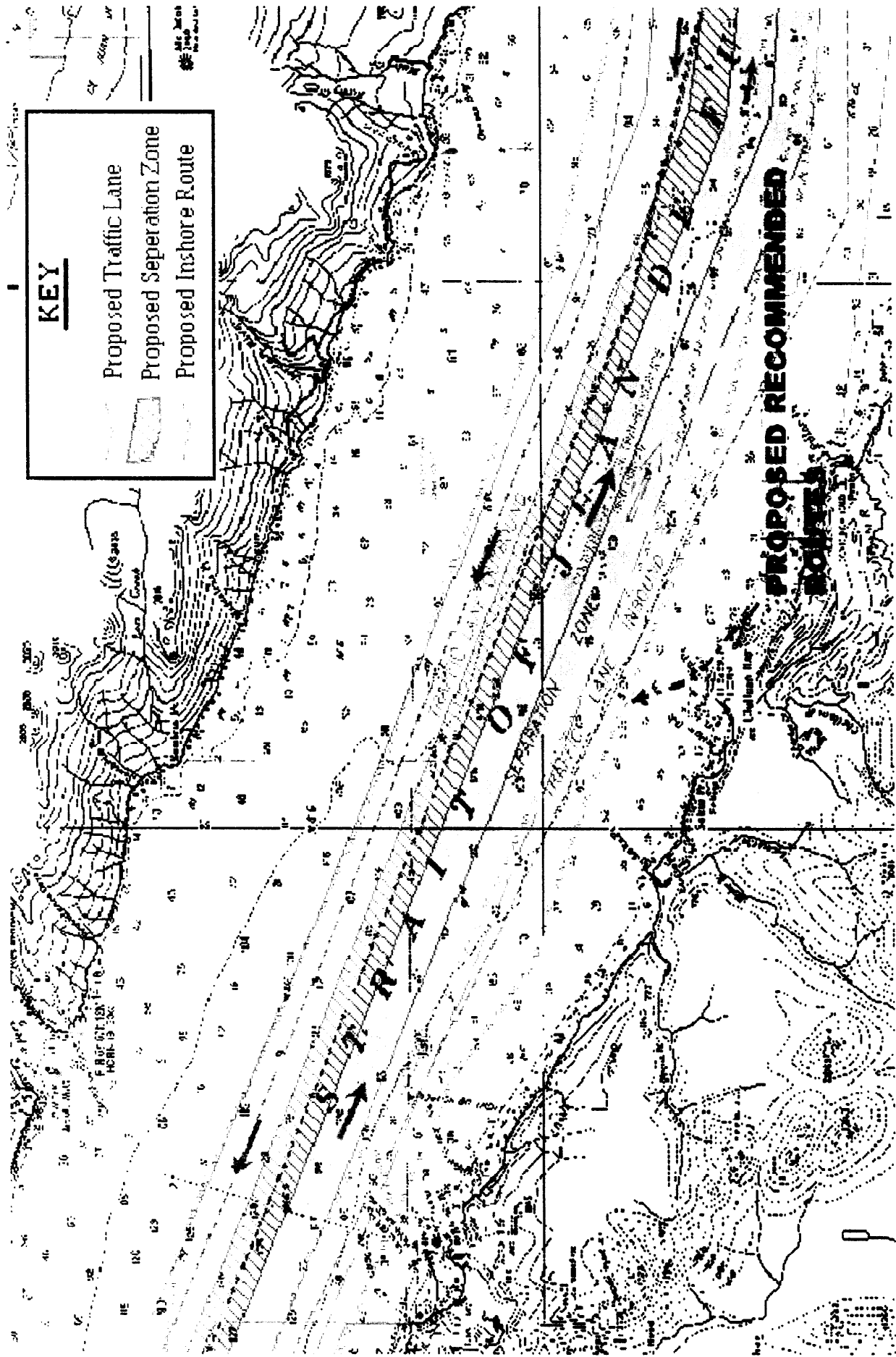
4. Although not regulatory actions, any changes to aids to navigation resulting from the above actions will be accomplished through standard established procedures, i.e., notification of proposed changes in the Local Notice to Mariners with an opportunity for comment and notification of the change when completed.

5. Revised operating procedures for the CVTS can be accomplished within the constraints of existing regulations.

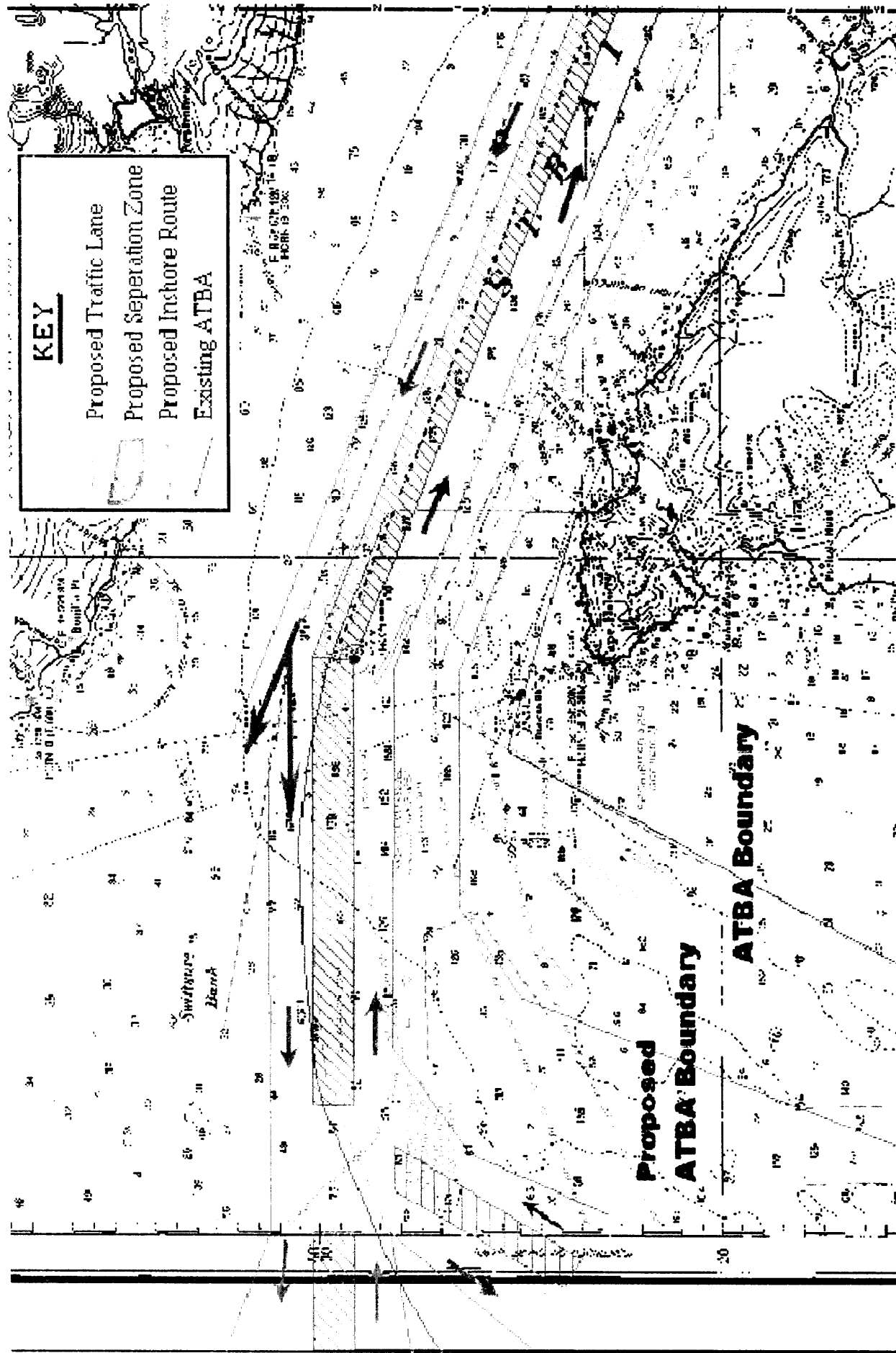
6. Canadian Authorities will follow their own, but similar implementation process.

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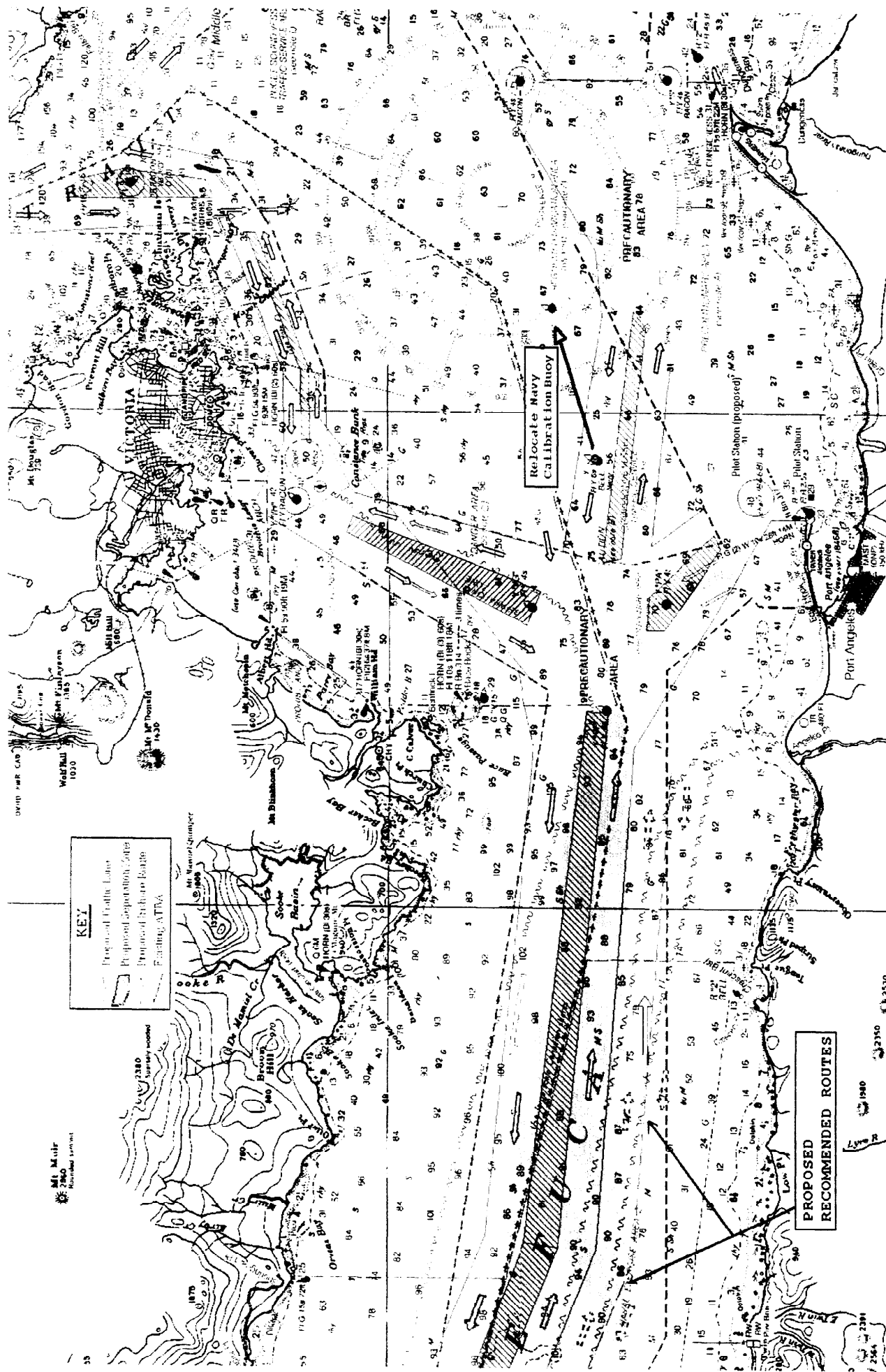
Appendix A(2) Strait of Juan de Fuca



Appendix A(1) Entrance to Strait of Juan de Fuca



Appendix A(3) Port Angeles Precautionary Area and North to Discovery Island



KEY

- Proposed Traffic Lane
- Proposed Precautionary Zone
- Proposed Barbican Buoy
- Floating ATVA

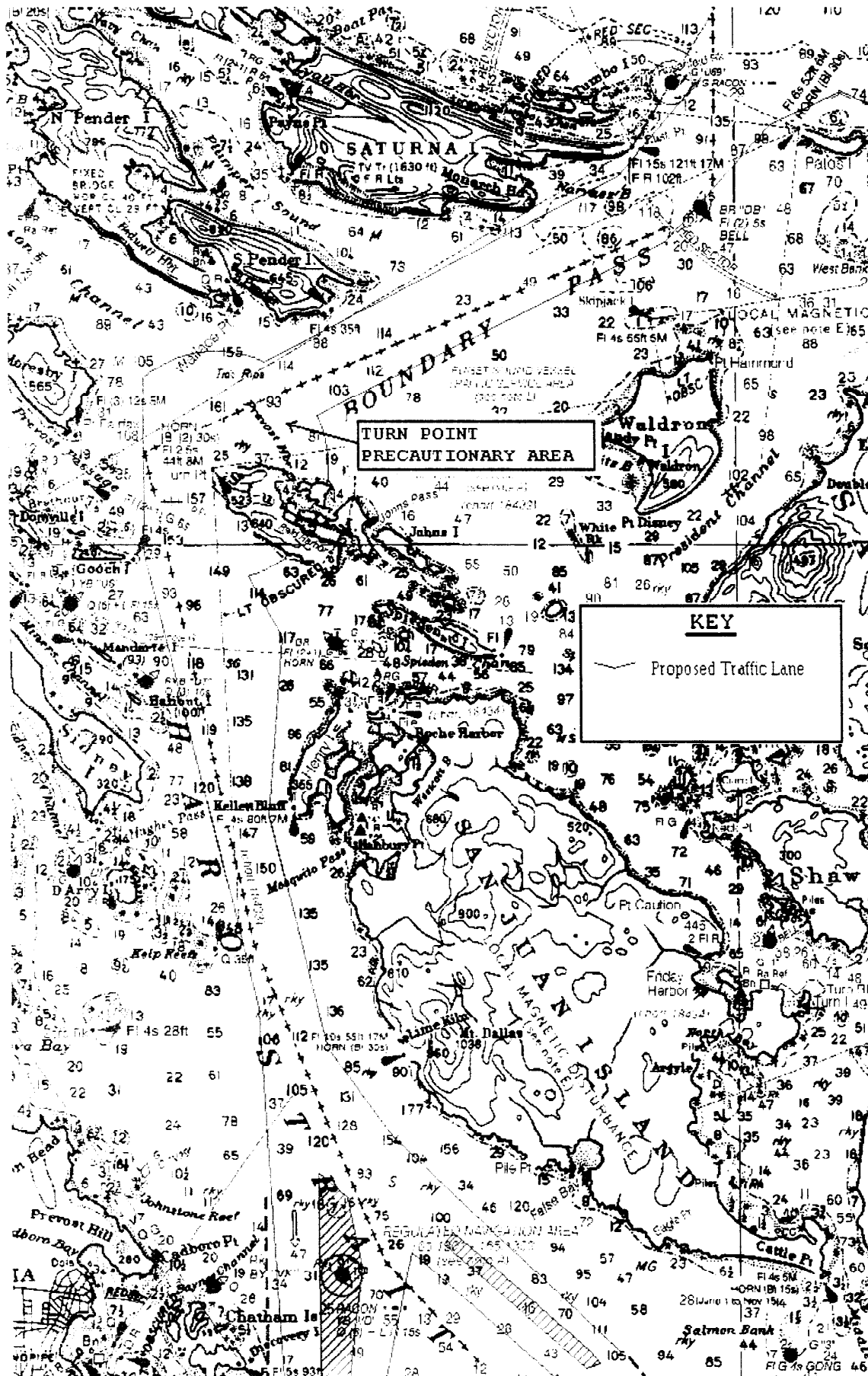
PROPOSED RECOMMENDED ROUTES

Relocate Navy Calibration Buoy

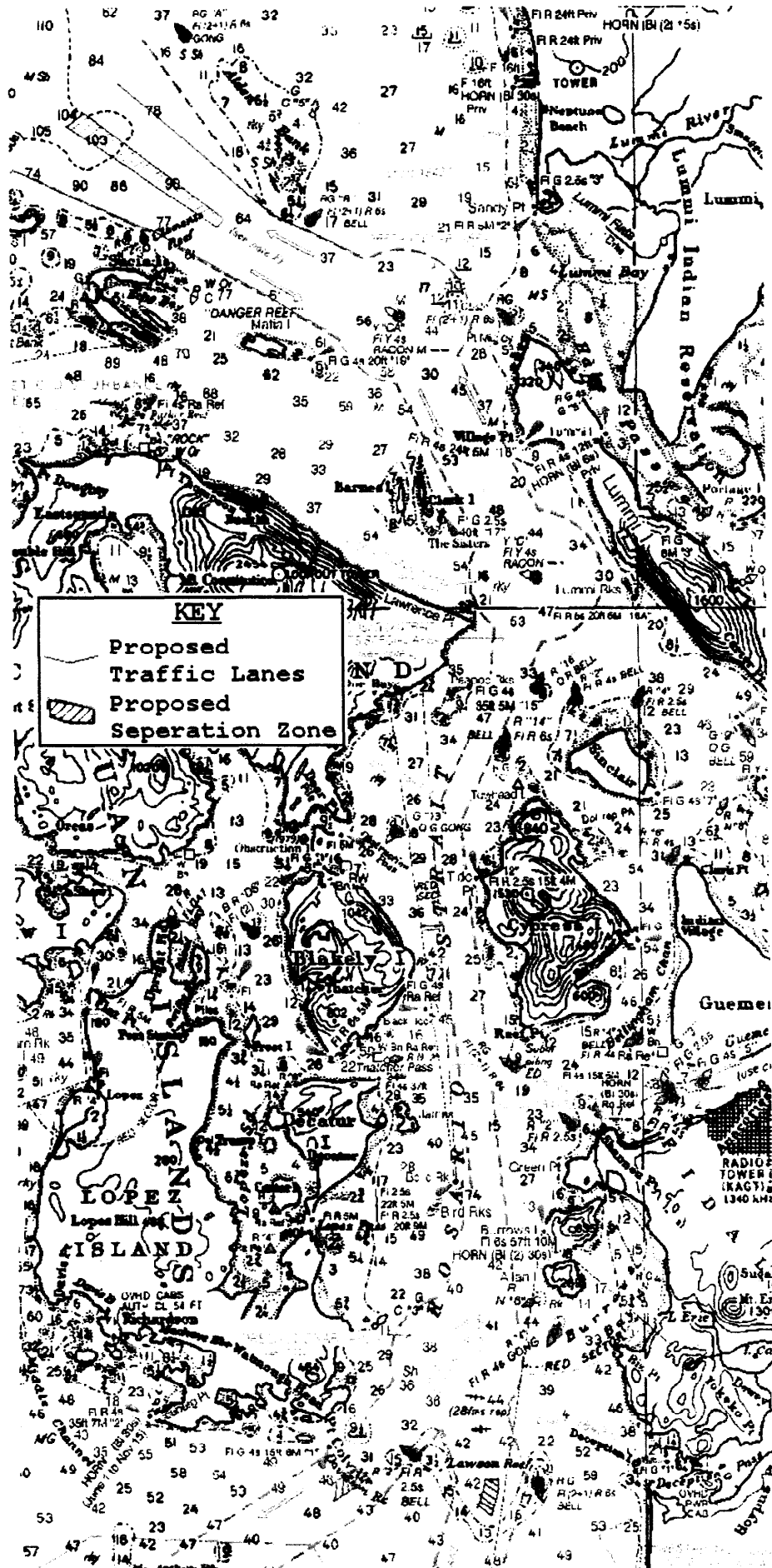
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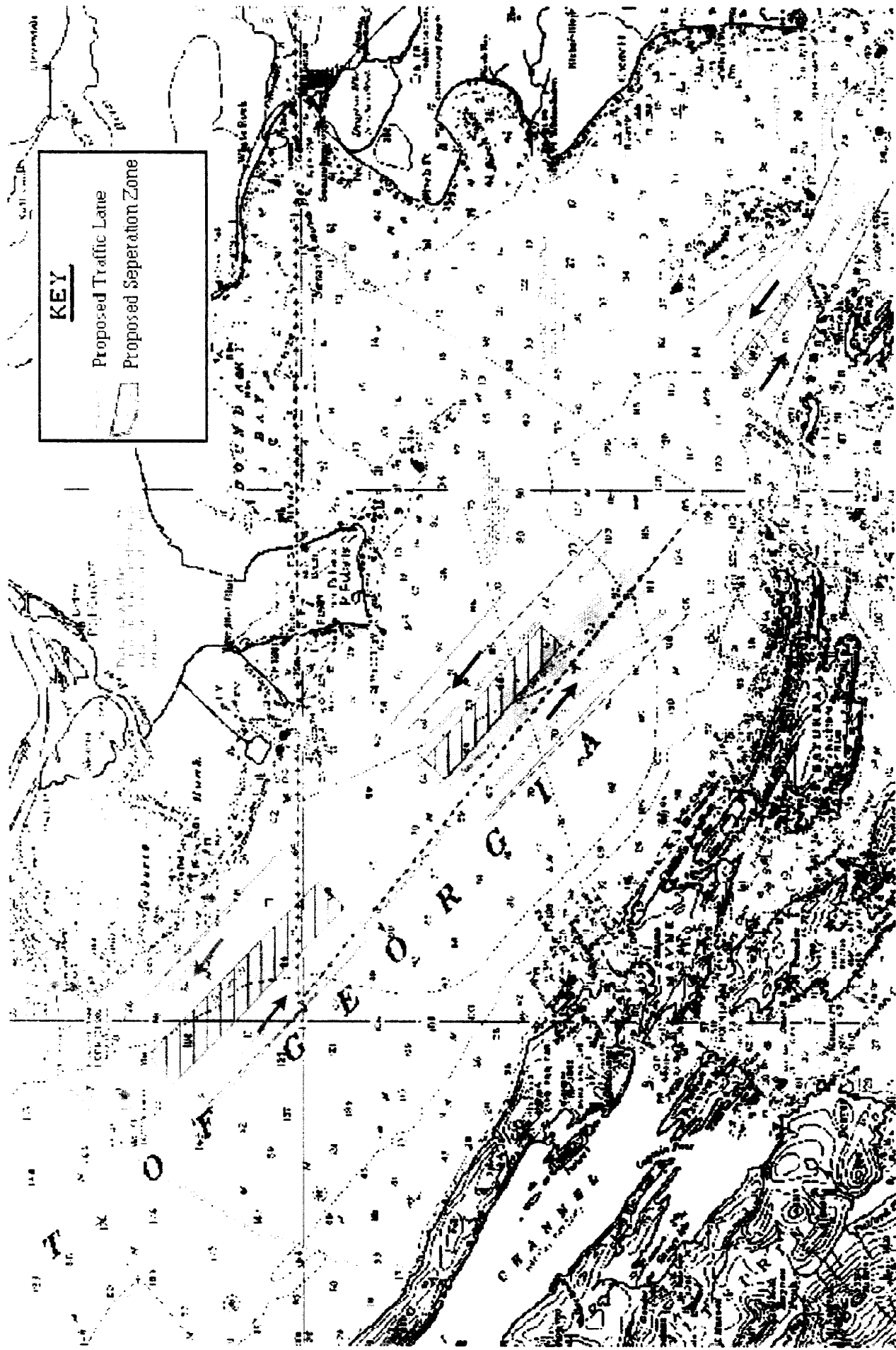
Appendix A(4) Haro Strait & Boundary Pass



Appendix A(6) Rosario Strait



Appendix A(7) Strait of Georgia



**TURN POINT
SOA
(CVTS SPECIAL OPERATING AREA)
FINAL DRAFT**

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PREAMBLE

The Turn Point CVTS Special Operating Area (SOA) has been established by the Canadian and United States Coast Guards' Cooperative Vessel Traffic System (CVTS), and Transport Canada, Marine Safety in cooperation with the regional marine industry and community to enhance order and predictability, the efficient movement of goods and services, and to further prevent accidents in respect to vessels transiting the boundary waters of Haro Strait, Swanson Channel and Boundary Passage in the vicinity of Turn point on Stuart Island, Washington.

Rules and procedures applicable to the Turn Point SOA have been designed to provide for the safe and orderly flow of vessel traffic. They have been the subject of intensive study and review; and have resulted from discussions with all interested parties including the two Coast Guards, Transport Canada Marine Safety, local and regional constituencies, Pilotage authorities, the Council of Marine Carriers of B.C., the B.C. Chamber of Shipping, and the general marine community.

Appreciation is extended to everyone who has participated in the final configuration of the Turn Point SOA, and the development of applicable procedures.

INTERPRETATION

- "SOA" means Special Operating Area.
- "MCTSO" means Marine Communications and Traffic Services Officer.
- "PPO" means Pollution Prevention Officer.
- "Authorities" means:
 - For U.S. Waters: USCG 13th District, Captain of the Port (COTP) Puget Sound;
 - For Canadian Waters: Transport Canada, Marine Safety, Regional Director, Pacific Region.
- "CIP" means Calling-In-Point.
- The Turn Point CVTS Special Operating Area (SOA) consists of those Canadian and United States Waters contained within:
 - (1) a 135 degree sector centered on a line originating at 48°-40.87'N, 123°-13.96'W extending 292.5 degrees True;
 - (2) bounded by an arc originating at 48°-40.87'N, 123°-13.96'W with a radius of 3,400 yards. (See attached chartlet)
- A "VTS Participant" is any vessel, including a VMRS User in U.S. waters, that participates with the designated Vessel Traffic System.
- In U.S. waters, a VMRS User means a vessel, or an owner, operator, charterer, master, or person directing the movement of a vessel, that is required to participate in a VMRS within a VTS area.
- In U.S. waters, a Vessel Movement Reporting System (VMRS) is a system used to manage and track movements within a VTS area.
- Designated Vessel Traffic System is the Victoria Marine Communications and Traffic Services (MCTS) Centre, "Victoria Traffic", Sector 1 of the Vancouver VTS Zone, VHF Channel 11, 156.55 MHz.

- A "Hazardous Vessel Operating Condition" means any condition related to a vessel's ability to safely navigate or maneuver, and includes, but is not limited to:
 - (1) The absence or malfunction of any required vessel operating equipment, such as propulsion machinery, steering gear, radar system, gyrocompass, depth sounding device, automatic radar plotting aid (ARPA), radiotelephone, navigational lighting, sound signaling devices or similar equipment;
 - (2) Any condition on board the vessel likely to impair navigation, such as lack of current nautical charts and publications, personnel shortage, or similar condition; and
 - (3) Vessel characteristics that affect or restrict maneuverability, such as cargo arrangement, trim, loaded condition, under keel clearance, speed, or similar characteristics.

- Vancouver VTS Zone, Turn Point Calling-In-Point (CIP 6) is a 3 NM radius approaching Turn Point out of Swanson Channel, Boundary Passage (approx. abeam Gowland Point), and Haro Strait (approx. abeam Danger Shoal).

APPLICATION

These procedures apply to all VTS participant vessels including VMRS users.

TURN POINT SOA

The Turn Point CVTS Special Operating Area (SOA) consists of those Canadian and United States waters contained within:

- (a) a 135 degree sector centered on a line originating at Turn Point, 48°-40.87' N, 123°-13.96' W extending 292.5 degrees true;
- (b) bounded by an arc originating at Turn Point, 48°-40.87' N, 123°-13.96' W with radius 3,400 yards. (See attached chartlet)

MOVEMENT PROCEDURES

The following operating requirements apply to all vessels within or approaching the Turn Point Special Operating Area (SOA):

1. A VTS participant shall:
 - (a) if towing astern, do so with as short a hawser as safety and good seamanship permits;
 - (b) not enter if a hazardous vessel operating condition or circumstance exists with their vessel without prior authorization from the authorities through the Sector MCTSO (See Interpretation); and
 - (c) as may be directed by the Sector MCTSO, not enter if a hazardous vessel operating condition or circumstance exists with another vessel within or near the Turn Point SOA.

NOTE: Under Item (1) (c), the hazardous operating condition or circumstance would be of such a serious nature as to affect the safety of the vessel, other vessels, and/or the environment. The MCTSO may invoke the powers of a Pollution Prevention Officer (PPO) as directed by the authorities.

2. A VTS participant of 100 meters or more in length shall:
 - (a). Not enter the special area when another VTS participant of 100 meters or more in length is already located in the Special Operating Area (SOA) unless following astern on a similar course; and
 - (b) When following astern, maintain a minimum 1,000 yard separation with the vessel ahead.
3. All VTS participants shall report to "Victoria Traffic" northbound at CIP 4 (Brotchie Ledge) and CIP 5 (Hein Bank) and southbound at CIP 7 (East Point) as required by regulation. "Victoria Traffic" will provide the necessary traffic advisory information for CIP 6 (Turn Point).
4. All VTS participants shall report to "Victoria Traffic" at CIP 6 (3 NM from Turn Point) as required by regulation. "Victoria Traffic" will provide the necessary updated traffic advisory information for the Turn Point SOA.

5. All VTS participants southbound via Swanson Channel shall be provided with the necessary updated traffic advisory information by "Victoria Traffic" for the Turn Point SOA when crossing abeam a line running 180 degrees true from Mouat Point, North Pender Island, to Moresby Island.

6. All VTS participants approaching the Turn Point SOA shall verbally communicate on the VTS radio channel, VHF Channel 11, 156.55 MHz, their intended navigation movements, and any other information necessary to comply with these operational measures and to make safe passing arrangements with other VTS participants operating within or near the special area. This action will be taken as soon after passing CIP 4 (Brotchie Ledge) or CIP 5 (Hein Bank) northbound, or CIP 7 (East Point) southbound as practical. For vessels southbound out of Swanson Channel for Turn Point, this action will be taken as soon after entering the north end of Swanson Channel as is practical. This requirement does not relieve a vessel of any duty prescribed by the International Regulations for Prevention of Collisions at Sea, 1972 (COLREGS), including the use of sound signals.